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September 11, 2009
Volume 31 Number 23
www.processor.com

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COVER FOCUS

Solutions To Common Data Center Problems

Is your data center running out of space? Unsure of what to do with old equipment? Find solutions to these problems and more.

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Top Trends & Technologies To Watch

Get up to speed with our quick guides to the top upcoming data center technologies and trends in four key areas: VoIP, data center building, IT automation, and mobile security.
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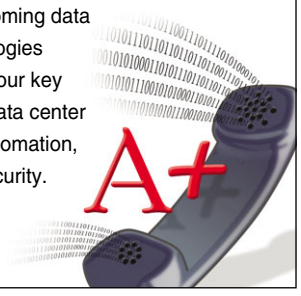

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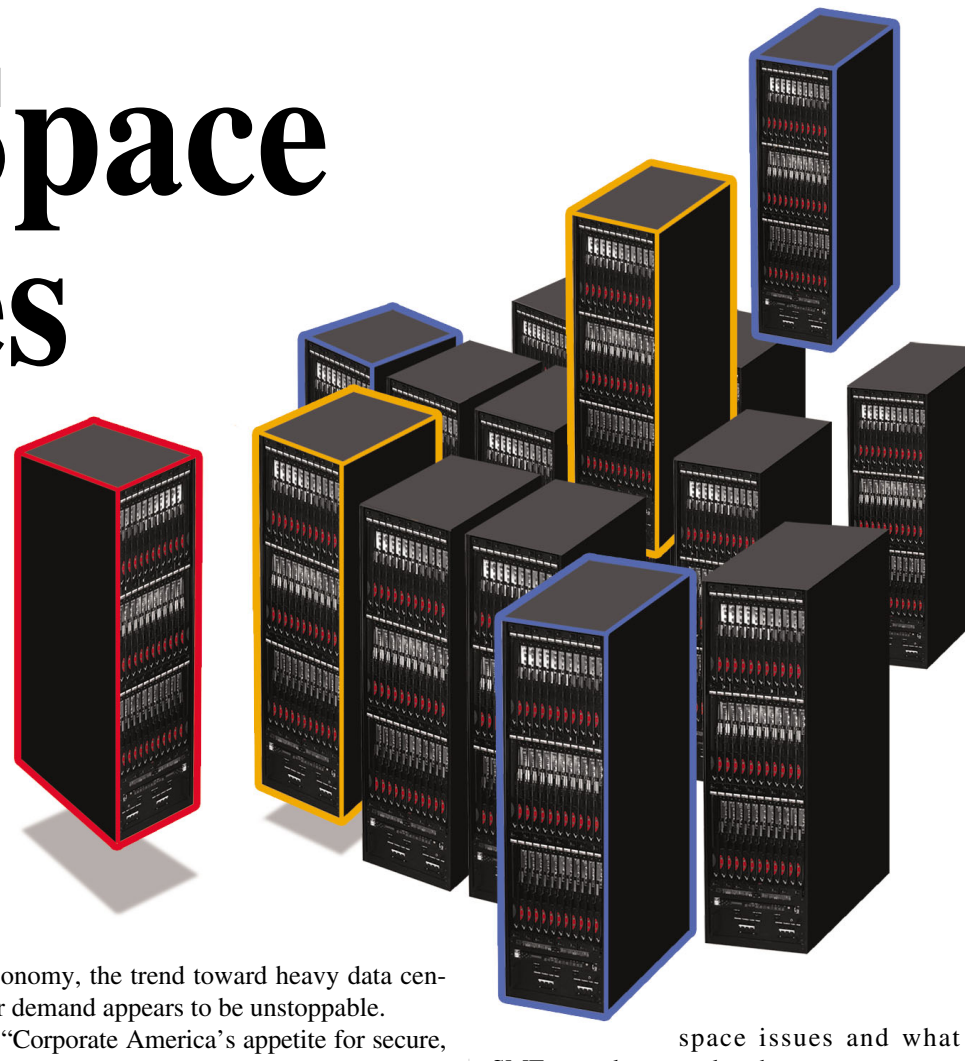
When Space Becomes Scarce

Dwindling Data Center Space Can Be A Constant Pain For The Unprepared, But Solutions Are Plenty



by Christian Perry

• • •

Don't chalk it up to an overactive imagination when it appears the walls in your data center are closing in on you; in fact, many data centers are struggling to shoehorn their resources into existing spaces, but as data demands grow, that challenge becomes ever more difficult. Despite the economy, the trend toward heavy data center demand appears to be unstoppable.

Key Points

- Unused or underutilized servers should be identified and either removed from data center floors or reintegrated to handle existing requirements.
- Thermal containment systems not only can improve cooling but can provide far greater space utilization than traditional hot aisle/cold aisle designs.
- Both new technologies and virtualization can go a long way toward decreasing the overall technology footprint of the data center.

"Corporate America's appetite for secure, robust locations to store and process critical electronic information, offsite IT operations, and disaster recovery has increased dramatically," says John Patterson, principal at Capstar Commercial Real Estate Services (www.capstarcommercial.com). "There are no projections that indicate the data center growth momentum to decrease in the foreseeable future."

Patterson notes that the long-term solution—further development of new facilities—will emerge only when capital is available. In the meantime, rapid growth is forcing data center personnel to identify space-related problems and develop new tactics for accommodating both present and future needs. Here, then, is a look at some of the most common factors compounding space issues and what SMEs can do to combat them.

Presence Of Rogue Servers

As data center projects come and go, servers often come along with those projects, but they don't always go. Instead, they consume valuable floor space but don't necessarily contribute any real value to data center functions. Jim Sweeney, principal solutions consultant with GTSI (www.gtsi.com), says that this problem is particularly prevalent in laboratory environments, where servers once used for projects and demos continue to function, but no one seems to know what the servers are doing.

In GTSI's own lab, personnel regularly conduct "server sweeps," in which servers

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Mobile Device Plans

Is Corporate Or Individual Liability Best For You?

by Elizabeth Millard

• • •

With workforces that are more mobile than ever, enterprises are taking a closer look at how they manage mobility services. When outfitting employees with mobile devices, there are typically two approaches when it comes to service from a wireless carrier: individual liable or corporate liable, depending on who pays for the device and plan.

Key Points

- Individual-liable plans tend to make sense when only a few employees have mobile devices.
- Corporate-liable programs have many advantages, including dedicated enterprise support, bulk purchasing, and pooled minutes.
- Any kind of plan should include employee usage policies.

Each approach has its own advantages, and both should be accompanied by a usage policy. Making the right choice depends on several factors.

Getting Definition

With a corporate-liable plan, all devices and services are paid by an employer, and contracts are arranged and signed by an enterprise representative. With this approach, the employer often chooses which devices to buy, as well. An individual-liable plan puts responsibility for purchasing devices and contract details on the employee, who is then reimbursed for the minutes spent on business calls or emails.

In a recent whitepaper written by Joe Basili, president and research director at Network Trends Now, the firm found that about 45% of enterprises surveyed had a mixture of corporate liable and individual

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Contact Name: _____

Company Name: _____

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City: _____ State: _____ Postal Code: _____

Country: _____

Email: _____ Web Address: _____

1. **What is the size of your company (how many employees)?**
   - ☐ Less than 10
   - ☐ 10 to 99
   - ☐ 100 to 199
   - ☐ 200 to 499
   - ☐ 500 to 999
   - ☐ 1,000+

2. **How often do you purchase computer hardware/software?**
   - ☐ Weekly
   - ☐ Bi-weekly
   - ☐ Monthly
   - ☐ Quarterly
   - ☐ Annually
   - ☐ No Involvement

3. **What is your annual computer hardware/software purchasing budget?**
   - ☐ $0 to $9,999
   - ☐ $10,000 to $24,999
   - ☐ $25,000 to $49,999
   - ☐ $50,000 to $99,999
   - ☐ $100,000 to $249,999
   - ☐ $250,000 to $499,999
   - ☐ $500,000 to $999,000
   - ☐ $1,000,000+

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TECH & TRENDS

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■ ATEN Technologies' KL3116T **LCD KVM** is a hybrid product that gives managers a high level of control over servers in a data center .....**page 27**

■ LogRhythm's Log and Event Management System provides the Phoenix Suns with a proactive means of **alerting IT staff** to numerous events, including when a server is running out of space .....**page 28**

■ The ActiveStor **network storage system** by Panasas is a high-performance system that provides data to the servers at lightning speeds and minimizes and/or eliminates stalled applications.....**page 28**

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News

PG&E To Construct Wind Energy Plant

Pacific Gas & Electric announced plans to build an underground compressed-air storage facility to utilize wind energy during nonpeak and peak periods. The initial federal stimulus fund package request starts at $25 million, which will be used to construct a 300-megawatt compressed-air facility. According to a report from the American Wind Energy Association, the United States has assembled more than 8,500 megawatts of wind power and energy storage in the last year without utilizing large-scale plants. Compressed-air storage is garnering renewed interest due to its inexpensive electricity-producing methods.

Windows 7 Will Launch In New York City

Kicking off with a release event hosted by Microsoft CEO Steve Ballmer, the software company plans to release Windows 7 in New York City on Oct. 22 in a similar fashion to Windows Vista's NYC launch in November 2006. Microsoft intends to promote Windows 7 to enterprises by publicizing Windows 7's XP mode, which supports Windows XP applications. The economic downturn may delay some companies' immediate adoption of Windows 7; however, looking ahead, the release is expected to surpass the long-term penetration rate of Windows 2000/XP.

EMC Acquires Kazeon

EMC is in the process of purchasing Kazeon Systems, which produces products for collecting and analyzing electronic information for legal discovery. EMC wants Kazeon's technology to enhance EMC's SourceOne line of products for e-discovery, archiving, and compliance. SourceOne users can use the software to perform early assessments to determine the merits of a case, classify data, and delete or archive documents. EMC currently has partnerships to resell e-discovery software with Kazeon, Clearwell Systems, and StoredIQ. Financial details of the deal have not yet been disclosed.

Older Adults Participate In Social Networking

A recent study performed by Forrester Research claims that companies can begin to target older populations through social networking sites such as Facebook and Twitter. A survey of 4,455 people between the ages of 18 and 88 shows that social networking participation from people over the age of 34 has grown more than 60%. The study states that people in their later 40s and 50s are slowly beginning to participate in social networking but are still behind their 34- to 44-year-old counterparts. Another section of the survey showed that 70% of adults over 55 use social tools at least once a month, 26% use social networking sites, and 12% actually create social content. The survey found that only 18% of those surveyed don't use social networks at all, which is down from 25% in 2008 and 44% in 2007.

Broadband Applications Exceed $28 Billion

The NTIA (National Telecommunications and Information Administration), along with the RUS (Rural Utilities Service), has received more than 2,200 applications asking for financial assistance in setting up broadband access. Earlier this year, $7.2 billion was allotted to an economic stimulus package intended for broadband deployment, but NTIA and RUS have received applications for about $28 billion. Among those who turned in applications are state and local governments, nonprofits, libraries, and universities. One applicant, Level 3 Communications, which provides fiber-based broadband services, asked for $15 million in addition to $5 million of its own money in order to create connections in rural areas spanning six states.

Intel Revises Revenue Forecast Upward

Times have been better than expected for microprocessor maker Intel, leading the company to revise its third-quarter guidance. The company has a clear performance lead with its SSDs and its Core i7 line of processors, and it has kept competitors from making alternative compatible chipsets for the latter. Intel now foresees revenue of $9 billion for the quarter, give or take $200 million; this is an improvement and a refinement of the previous estimate of $8.5 billion, give or take $400 million. Its gross margin should be between 53% and 55%, a slight rise from the previous 51% to 55% range.

Salesforce.com Reports Impressive Second Quarter

Business software provider Salesforce.com reported better-than-expected financial results for the second quarter and raised its outlook for next year. The company's Q2 net income was $21.2 million, or 17 cents per share—a big jump from $10 million in the same quarter last year. Revenue was also up considerably, increasing 20% to $316.1 million; the earnings beat the company's projected figures of $312 million to $313 million. Salesforce.com expects third-quarter earnings of up to $324 million, or 16 cents per share; Wall Street analysts have predicted revenue of $319 million.

RIM Acquires Mobile Browser Maker

Research In Motion, maker of the popular BlackBerry smartphones, has acquired Torch Mobile, purveyor of the Iris mobile browser. RIM stands to benefit from integrating Torch Mobile's browser technology into its BlackBerrys, which generally offer an inferior Web browsing experience compared to competitors' offerings such as the iPhone, Android, and Pre platforms. RIM has also reportedly been looking into adding Adobe's Flash and Microsoft's Silverlight technologies into its smartphone browsers, and this acquisition is expected to help RIM achieve that goal.

WATCH THE STOCKS

This information provides a quick glimpse of current and historical stock prices and trends for 14 major companies in the technology market.

Company	Symbol	Year Ago	Aug 20 $	Sept 2 $	% change from previous issue
AMD	AMD	$5.96	$3.52	$4.28	▲ 21.59%
CA	CA	$22.10	$22.63	$20.20	▼ 10.74%
Cisco Systems	CSCO	$22.26	$21.89	$21.55	▼ 1.55%
Dell	DELL	$20.41	$14.55	$15.35	▲ 5.5%
Google	GOOG	$444.25	$460.41	$453.01	▼ 1.61%
HP	HPQ	$44.96	$43.98	$44.25	▲ 0.61%
IBM	IBM	$114.33	$118.95	$116.09	▼ 2.4%
Intel	INTC	$20.61	$18.71	$19.47	▲ 4.06%
McAfee	MFE	$36.59	$41.73	$39.06	▼ 6.4%
Microsoft	MSFT	$25.65	$23.67	$23.86	▲ 0.8%
Oracle	ORCL	$20.07	$21.94	$21.77	▼ 0.77%
Red Hat Software	RHT	$19.01	$21.93	$22.76	▲ 3.78%
Sun Microsystems	JAVA	$8.50	$9.27	$9.32	▲ 0.54%
Symantec	SYMC	$21.48	$15.35	$15	▼ 2.28%

NOTE: This information is meant for reference only and should not be used as a basis for buy/sell decisions.

News

Report: Cell Phone-Cancer Link Strong In Young Users

A new report from the International EMF (Electromagnetic Field) Collaborative claims that cell phones are dangerous for children and young adults and that their exposure to cell phones should be strictly limited in order to prevent a significant increase in brain cancer. Citing a report released earlier this year in the International Journal of Oncology, the group claims that people who started using cell phones at a young age had an increased risk of 420% of developing brain cancer. In its report, the EMF suggests eight ways to lessen the danger, including sending texts instead of talking, refraining from cell phone use in moving vehicles, and using corded landline phones instead if possible.

Privacy & Behavioral Advertising Self-Regulation

A coalition of 10 consumer and privacy advocacy groups has issued a 13-page legal document urging Congress to create laws that protect consumers' privacy regarding online behavioral advertising. Companies such as Google glean data based on a user's online behavior, such as what types of searches one performs, and uses that information to target related ads to the user. The group ostensibly wants to provide input on the matter of self-regulation before they're subjected to government regulation, which tends to be stricter and more expensive to implement.

Iowa State University Receives A Supercomputer

With a $719,000 grant from the National Science Foundation, a $200,000 equipment donation from Sun Microsystems, and $400,000 from its own coffers, Iowa State University has purchased its second supercomputer, dubbed Cystorm. The first, named CyBlue, was purchased in 2006. Cystorm is capable of 28.16 trillion calculations per second at peak performance, making it about five times more powerful than CyBlue. Both supercomputers will be used extensively in scientific research.

Researchers Develop New LED Technology

Using a process that creates ultrathin inorganic light-emitting diodes, a team of international researchers has developed an LED technology that can be applied to flexible surfaces. Inorganic LEDs are different from organic LEDs because they are typically more costly, thick, and difficult to manufacture, but the inorganic material shines brighter and lasts longer than conventional LEDs. The new process allows for the production of large arrays of ultrathin and ultrasmall LEDs for use in general lighting and high-resolution display systems. The inorganic LED technology may be used in TV screens that can be rolled, in brake light indicators that can fit the contour of a car, or in health monitoring devices.

VeriSign Sells Messaging Business To Syniverse Holdings

In a move to help boost its advanced messaging hub, Syniverse has purchased VeriSign's messaging business for $175 million. The Syniverse messaging hub provides SMS, MMS, voice, and email services to third-party content creators, mobile operators, and enterprises. The purchased VeriSign division will focus on working with intercarrier gateways, picture mail, and premium messaging for third parties and enterprise mobility. VeriSign sold a different type of mobile messaging unit in February for about $65 million, and News Corp bought its Jamba/Jamster mobile content business for $200 million in 2008.

Majority Want In-Flight Wi-Fi

In a recent study for the Wi-Fi Alliance, Wakefield Research surveyed 480 frequent business travelers aged 18 and older and found that an overwhelming majority (76%) would choose an airline based on whether Wi-Fi was offered in-flight. More than half of those surveyed (55%) also said they would be willing to adjust their departure by a day if they could get in-flight Wi-Fi. Wi-Fi turned out to be even more popular than an in-flight meal, with 71% of travelers saying they would rather opt for wireless Internet access. Popular in-flight Wi-Fi activities revealed in the study include checking and responding to business email, logging on to work-related systems, checking personal email, browsing the Web, streaming videos or music, shopping online, playing online video games, and using social networking applications.

Wi-Fi Is A Must For Smartphones

According to an ABI Research study, Wi-Fi is becoming a must-have feature of smartphones. Based on the data, researchers expect global shipments of Wi-Fi-enabled mobile phones to double between now and 2011. About 300 million cell phones that can connect to both Wi-Fi and cellular networks are expected to ship in 2011, compared to 144 million that will ship this year. For 2009, 85 million of the smartphones that ship will be Wi-Fi-enabled. By 2014, ABI Research predicts that 90% of all smartphones will offer Wi-Fi. ABI Research claims that carriers who were once wary of Wi-Fi reducing cellular network usage have now warmed to the ubiquitous protocol.

Hacker Attacks Increasing On Trusted Sites

There's been a 508% increase in discovered new malicious Web links in 2009's first half vs. 2008's first half, according to a new "X-Force 2009 Mid-Year Trend and Risk Report" from IBM. Helping to account for the current state of Web insecurity are new malicious threats on legitimate or trusted Web sites, including blogs, search engines, and news sites. Such threats include SQL injection attacks, which climbed 50% from Q4 2008 to Q1 2009 and nearly doubled from Q1 2009 to Q2 2009. Other worry areas include "veiled Web exploits" such as PDF files, which now rank at an all-time high, and Trojans, which accounted for 55% of all new malware for 2009's first half, a 9% increase from 2008's first half. Phishing incidents, however, have seen a dramatic decline.

Risk Assessment Gives IT Sector Passing Grade

A new 114-page "IT Sector Baseline Risk Assessment" report has praised the IT sector's resiliency and redundancies to mitigate attacks. The report examines six critical IT areas and presents various scenarios in which well-placed malicious attacks against IT infrastructure could cause national disruptions. In addition to offering remedies to such threats, the report, a joint mission from the U.S. Department of Homeland Security and IT SCC (Information Technology Sector Coordinating Council), focuses on high-risk threats in areas of supply chain, domain-name resolution services, identity management and trust support services, Internet-based content and communication services, Internet service and routing providers, and incident response services providers. Overall, DHS and IT SCC officials say measures are mostly already in place or are in the planning stages to lessen the chances of wide-scale disruptions. Released in late August, the report "is intended to provide an all-hazards risk profile that IT sector partners can use to inform resource allocation for research and development and other protective program measures to enhance the security and resiliency of the critical IT sector functions."

Cloud Computing Gaining Interest

More than 80% of respondents to a survey conducted by Applied Research-West are either in trial, implementation, or usage stages of public or private cloud computing deployments. In addition, 66% of respondents say they have a dedicated cloud budget, with 71% expecting cloud computing budgets to grow over the next two years. However, the study, which was sponsored by F5 Networks, shows there's quite a bit of confusion over what exactly constitutes cloud computing. About 75% of respondents say cloud computing usually or always includes platform-as-a-service elements, 65% say it usually or always includes infrastructure as a service, and 61% say it usually or always includes software as a service.

Study: Users Of Social Networks Vulnerable

Users of online social networks are vulnerable to having personally identifiable information linked to tracking cookies used by the third-party servers many social networks use to distribute advertising and other content. The finding was noted in a report by two researchers from AT&T Labs and Worcester Polytechnic Institute, which notes that although the privacy policies of many social networks make it clear that they provide nonidentifying information to third parties, many users don't understand that their social network identifier provides a way for third parties to discover the user's name and other personal information.

eBay To Sell 65% Stake Of Skype

eBay announced plans to sell a 65% stake of its Internet telephony company, Skype, to private investors and retain the remaining 35%. The deal, expected to close in the fourth quarter of this year, states that eBay will receive $1.9 billion in cash and a $125 million note from the buyers for Skype, which is valued at $2.75 billion. Silver Lake leads the investor group, which also includes Index Ventures, Andreessen Horowitz, and the Canada Pension Plan Investment Board. eBay President and CEO John Donahoe is pleased with the deal, saying that it will unlock "both immediate and long-term value for eBay and tremendous potential for Skype."

Netbook Shipments Up

According to data released by DisplaySearch in its "Quarterly PC Shipment and Forecast Report," more than 38 million netbooks were shipped in Q2 2009, up 40% from the first quarter. The latest numbers mean the smaller, more portable computers captured 22.2% of the portable PC market, up from 17.8% in Q1. Meanwhile, although traditional notebook shipments grew 22%, they only captured 77.8% of the market share, down from 82.2% in Q1. The report also found that due to the lower price of netbooks, they are more popular than notebooks in areas such as Latin America and China.

Upcoming IT Events

Are you looking to learn more about data center or IT topics? Network with some of your peers? Consider joining a group of data center professionals. If you have an event you'd like listed, please send an email to feedback@processor.com.

- SEPTEMBER -

AITP Garden State
Sept. 15
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=21

AITP Southwest Missouri
Sept. 15
Springfield, Mo.
aitpspringfield.org

Central Ohio PMI
Sept. 15, 8 a.m.
Platform Labs
1275 Kinnear Road
Columbus, Ohio
www.platformlab.org

Central Ohio VMware User Group
Sept. 15, 9 a.m.
Platform Labs
1275 Kinnear Road
Columbus, Ohio
www.platformlab.org

ICCA Kansas City
Sept. 15, 7:30 a.m.
Perkin's Restaurant
Overland Park, Kan.
www.icca-kc.org

ISSA St. Louis Chapter
Sept. 15
St. Louis, Mo.
stl.issa.org

Oklahoma City AITP Chapter
Sept. 15
Oklahoma City, Okla.
www.aitp.org/organization/chapters/chapterhome.jsp?chapter=40

AITP Northeastern Wisconsin Chapter
Sept. 16, 4:15 p.m.
Holiday Inn Select
150 S. Nicolet Road
Appleton, Wis.
new.aitp.org

ISSA New Jersey
Sept. 16
nj.issa.org

ISSA Oklahoma City
Sept. 16
Spaghetti Warehouse
101 E. Sheridan Ave.
Oklahoma City, Okla.
www.issa-okc.org

AITP Atlanta
Sept. 17, 5:30 p.m.
Crowne Plaza Atlanta Perimeter NW
6345 Powers Ferry Road NW
Atlanta, Ga.
www.aitpatlanta.org/live

AITP Cornhusker "Connecting IT & People" Seminar
Sept. 17, 8:30 a.m.
SCC Continuing Education Center
Lincoln, Neb.
www.aitpcornhusker.org/uploads/2009_Seminar_Flyer.pdf

AITP Greater Boston
Sept. 17
www.bostonaitp.org

AITP Omaha
Sept. 17, 5:30 p.m.
Seraph Corp.
Omaha, Neb.
www.aitpomaha.org

AITP Tarheel
Sept. 17, 6 p.m.
Foothill Brewery
638 W. 4th St.
Winston-Salem, N.C.
www.aitp.org

Boston Society for Information Management
Sept. 17
www.simnet.org/Chapters/Northeast/Boston/tabid/78/Default.aspx

For more Upcoming IT Events, see page 5.

When Space Becomes Scarce

Continued from Page 1

are inspected for network activity. If the server isn't generating much network traffic and the hard drive lights never flash, the server's "owner" is located and asked about the server's purpose.

Poor hardware cycle control can also lead to excessive servers. Ken Oestreich, vice president of product marketing for Egenera (www.egenera.com), says that in theory, hardware is generally depreciated over a three- or four-year period, after which IT plans a physical refresh of technology and disposes of older hardware. But when that theory doesn't become reality, depreciated machines continue to populate the data center floor.

Reliance On Hot/Cold Aisles

The popularity of the hot aisle/cold aisle approach for addressing heat is widespread in today's data centers, but it comes with drawbacks, says Carl Cottuli, vice president of product development for Wright Line (www.wrightline.com). Recent trends indicate that cold aisles must become larger to accommodate the airflow requirements needed to support a single rack. Whereas two tiles were once shared to support racks facing each other in the cold aisle, three tiles are now needed to support two racks, resulting in a 6-foot-wide aisle.

An alternative is a thermal containment system that attaches to the top of the server rack and redirects the hot air away from the server units. "Ideally, the installation of a containment solution strives to achieve a zero-footprint consumption model," Cottuli says. "Today, many [containment] products exist that add floor space to facilitate the install. The better products do not consume any space. The best-in-class solution would be the hot air containment products that are applied directly to the rack. When this is done, it allows the rack layout to be untethered to a hot/cold aisle design concept."

Reluctance To Implement New Technology

GTSI's Sweeney relates a recent conversation he had with a customer, who explained that although a particular vendor's line of switches looked "interesting," the customer wouldn't even begin to evaluate it until 2011—despite the fact that one of these switches would replace three of the customer's existing switches and reduce rack cabling by 80%.

"New technologies are key," Sweeney says. "Specifically task each team lead with keeping your organization ahead of the technology curve. You do not need to be bleeding edge, but there is nothing wrong with leading edge, especially in special areas like developers' test/dev infrastructure, etc. When some of these technologies can provide the ROI that they can, it is hard to justify ignoring these technologies for two years."

Ironically, implementation of new technology itself can lead to storage problems. Oestreich says that development, testing, and staging traditionally require many different types of hardware and demand relatively low utilization of these machines and their environments. To prevent data center space from dwindling, Oestreich advises stricter oversight of these practices to prevent them from spiraling out of control.

Housing Nonessential Functions

When open data center space becomes sparse, it can be tough to justify keeping servers and similar equipment that's not quite necessary. Yet some data centers insist on packing their spaces with nonessential equipment that can exist without problems elsewhere.

Dr. Mickey Zandi, managing principal with SunGard Availability Services' Consulting Group (www.availability.sungard.com), recommends that data centers remove all noncritical components from the data center, including printers, copiers, and any storage spaces. Further, he says that office spaces can be remotely relocated, and data center support staff should be relocated to office space outside of the data center with remote access.

Ignoring Server Sprawl

According to Zandi, server sprawl—in which a disproportionate amount of physical servers is running at very low utilization—can not only consume space but can also waste power, cooling, and internal server resources such as CPU cycles, memory, and storage. He recommends consolidating and virtualizing all data center aspects, including hardware, networks, applications, and storage.

> Virtualization can add productivity without the need for more hardware.

Virtualization is especially useful, as it can add productivity without the need for more hardware. "[We can] provide enterprise-level data computing and storage in a virtual environment with an exponentially smaller footprint, which then affects the carbon footprint, power, cooling, space—all of these problems are addressed by using a virtual environment," says Jeff Davis, CEO of Host.net (www.host.net).

Sprawl can also affect cabinets and racks, but Zandi says this problem can be solved by validating your rack elevations and topology of your current infrastructure. "Rearrange IT equipment inside each cabinet to maximize efficiency and airflow. Make sure the inside of each cabinet is stacked to an efficient elevation while still providing ease of operation," he says.

Most Common Problem: Poor Planning

Even when all the pieces are seemingly in place for a data center that can accommodate both present and future needs, surprises inevitably spawn space issues. Jim Sweeney, principal solutions consultant with GTSI (www.gtsi.com), says that 20 years ago—when many of today's data centers were built—few planners could have accurately predicted what computing, networking, and storage resources would be required today. But despite the pain that those data centers are feeling today, poor planning remains rampant in the industry, he says.

"Take a serious look at your future data center needs," Sweeney says. "Today's blade servers mounted four to a rack will draw approximately 21.5kW at startup. Given the trend, data center designers need to design for at least that much and potentially more. New power/cooling trends are assisting with this problem. For example, it is now accepted as good design practice to vent hot air out the roof rather than trying to cool it for reuse in high-density environments."

Mobile Devices

Continued from Page 1

liable, while 22% went with individual only, and 33% had a corporate plan.

The firm also noted that in an effort to control costs, 34% of survey respondents with a corporate program were thinking of switching to an individual plan. Basili writes, "In thinking about the program, it is critical to consider the impact of opportunities to improve operational expense management, risk mitigation, and security for the enterprise."

Individual Advantages

Whether an individual plan is chosen is sometimes a matter of employee numbers, notes Chuck Hamby, regional public relations manager for Verizon Wireless. If a company has just a few employees who are mobile, it usually doesn't make sense to go through the process required for a corporate plan, which can include getting bids, evaluating vendors, and negotiating contracts.

If the number of mobile employees is under 25, there's the option to use individual plans but still get advice on security and connectivity from small business experts, which Hamby says are often available even at wireless retail stores.

In terms of challenges in the individual model, Basili notes that although a single employee's monthly expense may seem reasonable, the expenses aggregated over an entire workforce can become significant. It can also be difficult to see the true size of the expense for all employees. Another drawback is the amount of time required from employees in tweezing apart business and personal calls, texts, and emails on a device and then preparing expense reports.

Corporate Clout

When the number of employees with mobile devices goes over 25, it begins to make sense to look at a corporate plan, believes John Scott, president of CTS Partners (ctspartners.net), a project management and technology consulting firm. "With that type of plan, one of the main benefits is pooling minutes across the company, so you have efficiencies of scale," he says.

> When the number of employees with mobile devices goes over 25, it makes sense to look at a corporate plan.
>
> *- CTS Partners' John Scott*

According to Hamby, corporate deals can sometimes result in 18% to 20% off of regular consumer rate plans. So, even if a company believes it's controlling costs through using individual-liable programs, it's possible that even more could be saved by negotiating directly with wireless carriers.

Another advantage is corporate discounting on devices, which can be formidable, Scott notes. Not only would that allow for standardization on the same wireless technology platform, but corporate purchasing also usually includes free devices every 18 to 24 months.

There's also customer service to consider. With an individual plan, an employee with a sputtering device would have to call the wireless company's consumer tech support line, because he or she is the subscriber. But with a corporate plan comes enterprise support services, says Hamby. "When calling in to an enterprise support center as opposed to a consumer support center, you can get advice about business aspects of the devices, such as security," he notes.

If switching from individual to corporate, there may be some concern about having to pay termination fees from all the contracts that have to be ended, but Scott notes that companies can negotiate with wireless companies to get those fees covered, sometimes with a yearly rebate or an immediate credit, depending on the amount.

Top Considerations

According to Network Trends Now, here are several considerations for a wireless plan choice:

- Provisioning and order management
- Inventory and cost tracking
- User support
- Expense management
- Compliance
- Number portability
- Application management
- Risk mitigation
- Security

Security is also a benefit to corporate control of devices; another recent Network Trends Now survey found that 87% of all mobile devices used by enterprises now support email, multimedia messaging, Internet browsing, and data storage. With more control over how the devices are managed and updated, an enterprise may be able to implement better security measures.

Policy Creation

Whether going with an individual or a corporate plan, one important component to mobility is a usage policy that outlines mandates about content (no explicit material, for example) and downloads that can be transferred to the network upon syncing.

For an SME with an individual-liable plan, this usage statement will likely be more tricky, because the phone or device can also be used for personal calls or downloads, but an enterprise can still make rules as long as reimbursement is involved. With a corporate plan, usage can be more straightforward, and an enterprise can even ban or restrict personal use.

Keeping control over how the devices are used is important, notes Scott, but there can also be some latitude. He says, "If there's corporate liability and an employee wants to call home for five minutes every night while on a business trip, most companies aren't going to ask for reimbursement for that. A policy is just there to limit excessive personal use."

COVER FOCUS

Clearing Out The Clutter

Getting Rid Of Used Data Center Equipment Can Be Troublesome For SMEs

by Chris A. MacKinnon

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THE STOCKPILE OF used equipment and old data in your data center's storage room does not seem to be getting any smaller, but when it comes time to get rid of the debris, it's not uncommon for a data center to run into problems in the process. And although your used equipment may still be of benefit to other organizations, it's important to know what to do with the data that still exists on old hard drives. Here are a few of the most common problems related to getting rid of used equipment in the enterprise and what you can do to remedy them.

What To Do With The Equipment

Cliffie McKay, head of operations at DMD Systems Recovery (877/777-0651; www.dmdsystems.com), says there are many questions that a company faces when performing a network or system deinstallation: Do I have enough room to store the old equipment? Does the old equipment have any value left? Can I market the equipment myself, or should I sell it to another company? What are my responsibilities regarding the disposal of the equipment?

"Some recycling companies recycle as few as five systems, while others require at least a pallet of equipment," McKay says. "Companies usually receive more value for their equipment if they have a larger pickup than if they have a small pickup. As far as value is concerned, the more equipment that you have, the more value it will have to the reseller, but it really isn't practical to hold on to the equipment for much longer than necessary."

Corey Donovan, vice president of Vibrant Technologies (www.vibrant.com), says that the first plan of action when it comes to data is to determine what to do with the data on existing equipment. "Some large corporations buy and operate their own equipment in order to destroy drives and storage in house," he says. "Most data center managers choose to hire inexpensive service providers to destroy or wipe their data devices for them, either on- or offsite."

Donovan also says that in many cases, a remarketer will actually pay you for the right to recover and destroy your excess equipment. "For equipment that is absolutely obsolete, though, you will have to pay a small fee per unit to have it properly disposed of," he says. "Be sure to assess whether or not your equipment has resale value before paying to have it taken away."

Data Security Issues

McKay says that although servers typically house all of the important data, computers should be sanitized, as well. "There are some users that move files to their desktop to work on them and forget to delete them," he explains. "Data destruction can be a huge undertaking for many companies, [and] simply formatting the drive doesn't destroy the data. The cost of sanitizing the drive is minimal compared to the cost of having data leaked."

Brian Musil, Recycle Your Media's founder and acquisitions manager (877/798-2737; www.recycleyourmedia.com), says companies such as his offer a full chain of custody, taking media from a warehouse to the final sorting, inspection, and eradication. Musil says many companies also offer in-house data destruction for extra security-concerned clients.

Environmental Concerns

Musil says that shredding and incinerating equipment is bad for the environment and that the environment is affected when equipment gets buried in landfills or when toxins are released into the air from incineration. Recycling companies reduce the amount of e-waste that ends up in the landfill by putting these tapes back into reuse. "The tape manufacturers state some of the tape formats are good for over 1 million passes," Musil says. "It's very rare for a company to use the tapes to their actual end of life; they move on to new technology before the tape is used to its actual end of life."

Key Points

- Old equipment should be wiped clean of data before it is recycled or reused.
- Destruction methods such as shredding and incinerating are bad for the environment; look into more environmentally friendly methods or services.
- Storing tape media in a warehouse or an offsite data storage facility can be costly and take up too much space, so if you don't need it for data retention purposes, dispose of it.

Donovan recommends finding out what happens to your products downstream. He says, "IT and data center managers should ask themselves these questions: Does the buyer or recycler have a no-landfill policy? Have they been certified by an independent agency? Do they send equipment overseas for processing? Do they take custody of the equipment?" Even if the buyer does take custody, make sure they process the systems responsibly.

Additionally, according to McKay, there are two very confusing terms that asset management companies throw out: recycling and reuse. These two terms can be very confusing and are often used interchangeably, McKay says, so make sure you know whether your equipment will be recycled (often meaning used for parts or melted down) or reused (wiped clean and sold for use). P

Top Problem: Storing Archived Tape Media

Storing tape media in a warehouse or an offsite data storage facility can be costly and take up too much space, according to Brian Musil, Recycle Your Media's founder and acquisitions manager (877/798-2737; www.recycleyourmedia.com). "When these data tapes come to the end of their retention period, there are several reasons to recycle these tapes right away," he explains. "Not only [does it free] up warehouse space and [save] money on storage fees, but the data on the tapes can go into a litigation hold, or legal freeze, if your company is ever in a lawsuit or is being audited, so it's in your best interest to dispose of them immediately."

Upcoming IT Events

For more Upcoming IT Events, see page 3.

- SEPTEMBER -

TechExecs Network | CIO Panel Forum
Sept. 17, 8 a.m.
The Metropolitan Club of Chicago
Chicago, Ill.
www.techexecs.net/chicago.htm

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ISSA Upstate SC
Sept. 18, 11 a.m.
NuVox
301 N. Main St., Suite 5000
Greenville, S.C.
www.upstate-issa.org/index.htm

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AITP Pittsburgh
Sept. 21, 6 p.m.
Sokol Club-Southside
2912 E. Carson St.
Pittsburgh, Pa.
www.aitp-pgh.org

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AITP Akron
Sept. 22
www.akron-aitp.org

• • • • •

AITP Long Island
Sept. 22
www.aitp-li.org

• • • • •

ISSA Baltimore
Sept. 23, 4:30 p.m.
Sparta Inc.
7110 Samuel Morse Drive
Suite 200
Columbia, Md.
www.issa-balt.org

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TechExecs Network | CIO Panel Forum
Sept. 23, 8 a.m.
NetApp
Sunnyvale, Calif.
www.techexecs.net/siliconvalley.htm

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TechExecs Network | CIO Panel Forum
Sept. 24, 9:30 a.m.
CoreSite Wilshire Annex Data Center
Los Angeles, Calif.
www.techexecs.net/losangeles.htm

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TechExecs Network | CIO Panel Forum
Sept. 24, 8 a.m.
Strayer University
Roswell, Ga.
www.techexecs.net/losangeles.htm

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Babbage Simmel CISSP Class
Sept. 28-Oct. 2
8:30 a.m. to 4:30 p.m. daily
Babbage Simmel
2300 W. 5th Ave.
Columbus, Ohio
www.babsim.com

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ISSA Des Moines
Sept. 28, 11:30 a.m.
1401 50th St., Suite 200
West Des Moines, Iowa

- OCTOBER -

Data Center World
Oct. 4-7, 2009
Orlando, Fla.
www.datacenterworld.com

Data Center WORLD

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Information Security Summit
Oct. 29-30
Corporate College East
4400 Richmond Road
Warrensville Heights, Ohio
www.informationsecuritysummit.org

- DECEMBER -

Gartner 28th Annual
Data Center Conference 2009
Dec. 1-4
Las Vegas, Nev.
gartner.com/us/datacenter
For more than 27 years, the Gartner Data Center Conference has provided data center professionals real-world perspectives, tactics, and strategies to keep their operations running at peak performance. Our seven-track agenda drills down on servers and storage, TCO and IT operations excellence, aging infrastructures and the 21st Century data center, next-stage virtualization, consolidation, workload management, procurement, and major platforms.

COVER FOCUS

Stop Bandwidth Hogs In Their Tracks

Develop A Multipronged Strategy To Plug The Bandwidth Drain

by Bruce Gain

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Most people come to work and do their jobs without intentionally doing something that is bad for the network. Despite the temptation to goof off online, most users only occasionally access Facebook, watch the occasional YouTube video, or have email conversations that limit productivity or interfere with their work.

Key Points

- Collaborate with management to form an effective policy and clearly communicate usage guidelines.
- Use monitoring tools to see who is using more than their share of bandwidth and implement software that can cap traffic flow to and from individual IP addresses.
- Make bandwidth hogs aware of their usage; many times, the over-use is unintentional.

Then, there is that small percentage of rogue users who don't abide by the rules. They may see the workplace's fast bandwidth connection as a prime opportunity to download or upload movies or other illegal copies of large media files while their workstations remain connected to resource-sapping peer-to-peer sites. So besides the inherent security risks associated with the illicit use of an enterprise's resources, admins are often confronted by so-called bandwidth hogs—those users who consume more than their share of the data pipes and slow down the network for everyone else in the process.

Here are a few problems that come with bandwidth hogs and some suggestions for what you can do.

A Management Or IT Problem?

Users consuming too much bandwidth present problems for both management and IT. Business managers want their employees to get their work done and certainly do not want users doing something illegal or something that might interfere with business processes. Meanwhile, many admins view any user activity other than what is work-related as unnecessary, especially since a network's budget is almost always allocated for business resources and not for employees' recreation. More seriously, downloading and uploading files, posting videos on some sites, and other similar activity not only needlessly tax the network but can pose tremendous security risks, as well. The solution is for both the IT department and management to collaborate and hash out clear and effective policies that address both parties' wants and needs.

"There is nothing more important than stated policies. [Still], organizations need to be flexible and allow end users some personal time," says Ennio J. Carboni, president of network management for Ipswitch (www.ipswitch.com). "Employees will [use the network for non-work-related activity] anyway, so why not use it as a perk to increase morale? Policy must be stated and enforced."

Sometimes users are hogging bandwidth and visiting off-limits sites, but their managers are unwilling to do anything about it. The solution is to install network applications that can limit bandwidth of specific IP addresses, block applications, and blacklist certain Web sites.

For example, there are products that can provide application-level visibility and be positioned at the entry point to the WAN, says Joe Skorupa, an analyst for Gartner. Skorupa says these products can help companies block inappropriate sites and set bandwidth limits for harmless recreational sites.

Documenting and communicating how much bandwidth has been used can help, as well. "Generally a charge back to the department for the cost of their data use will put eyeballs on the activity," says Robert Enderle, an analyst for the Enderle Group.

Who Are The Culprits?

So you have hashed out a policy that meets the needs of both the IT department and the business managers. What do you do when one day you realize that storage backups and other applications are lagging due to bandwidth-capacity issues and you need to figure out why? Although most networks have the capability already, the importance of tight monitoring cannot be downplayed, especially when it comes to shutting down bandwidth hogs.

"Should companies monitor bandwidth and Internet usage overall? The answer is an affirmative 'yes,'" Carboni says.

Most Common Problem: Raising User Awareness

It is very common for users to continue sapping bandwidth unknowingly, even after policy has been clearly spelled out in the employee handbook or orally during the employee orientation process. This is why enforcement has to involve direct communications—or, simply put, approaching users and telling them they have to stop.

"Often, users don't realize how much bandwidth they are using until the reports are shown. They tend to modify behavior pretty quickly thereafter," says Ennio J. Carboni, vice president of network management for Ipswitch (www.ipswitch.com). "Show an employee a report that details their usage, and I assure you they will begin self-monitoring their level of usage. Ignorance is the biggest culprit in these situations."

COVER FOCUS

Support Staff Snags

Combat Common Problems To Provide Better End-User Support

by Drew Robb

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Many organizations think that implementing IT is all about deploying hardware and installing software, but that's only the beginning. Once you place technology tools in the hands of employees, they are bound to come across problems that need resolving. For this reason, a well-trained and capable help desk is vital to your enterprise's success. Here is a look at some of the top problems hounding support staff today and what you can do to provide better end-user support.

Key Points

- Learn to deal with high volumes of calls even with a limited support staff.
- Desktop standardization makes life much easier for the help desk.
- Working as a team can make it easier to find solutions to problems.

Handling A Stampede Of Traffic

New projects such as a software release, a new application, or a change in process invariably generate a deluge of support calls. When there are tons of callers, the only solution is to be prepared and efficient.

"Preparation and efficiency are key," says Jeremy Buck, lead support technician at Diskeeper (www.diskeeper.com). "As in the normal flow of life, there are things that occur that could not have been predicted, and your only ally is quick thinking and good planning."

Prior to any significant change, figure out how you are going to field a high volume of support calls and how they are going to be addressed. Obviously, someone must always be assigned support duties; however, although a lean crew may be enough for routine periods, it may not suffice for peak periods. Therefore, plan for some additional hands to be on deck during busy periods until the flood of calls recedes.

Calming Desktop Chaos

Desktop chaos is commonplace. Users install whatever programs they please, fill up hard drives with pictures or downloaded music, and even disable antivirus software. Such problems are compounded by having a mishmash of equipment on the desktop. Calls to tech support are a nightmare, as every user has a unique setup, a different version of the software, or a range of hardware that stretches back for a decade.

The solution is IT standardization backed up by policies on desktop usage. Set rules dictating that, for example, users are not to change the desktop configuration and can't touch antivirus, Web filtering, or other

Tools exist, for example, that analyze protocols and break down the type of traffic so that the network administrator can determine the source, destination, size, and duration of content, Carboni says. "It is a powerful way to understand the traffic inside the network and make hardware and software decisions to manage such load," Carboni says. "In addition, the administrator can make very timely decisions about shutting down some traffic so as not to interfere with the network during critical business events, such as during the busiest time of day or before a mailer goes out to 20,000 email recipients."

Resolving Privacy Issues

Trust and privacy issues are important concerns when managing employees. Clamping down by tightly monitoring exactly what employees do on their machines is often seen as inappropriate and is not effective. However, watching over bandwidth consumption alone does not necessarily pose privacy concerns. "There is a real distinction between monitoring bandwidth and monitoring content. Understanding the difference between the two is usually tied to maturity and/or years on the job as a network administrator," Carboni says. "Unless your business is handling highly sensitive and high-dollar transactions and data daily, the extreme action of monitoring every keystroke and every content site visited and viewed is senseless."

More Video Apps, Less Available Bandwidth

Video file-sharing applications are rapidly emerging in enterprises today, but unfortunately, many small to medium-sized enterprises' infrastructures are not ready. Video applications, instead of the users themselves, are rapidly becoming the biggest bandwidth hogs. But although network managers often have to fight management for any type of IT expense, it must be established that it is impossible to scrimp on resources when trying to get bandwidth-intensive video-sharing applications to work.

"Video will surpass all other media as the bandwidth hog as more and more social media technologies like YouTube become business tools," Carboni says. "The majority of enterprises in small and larger companies are not at all ready for the coming of video and other technologies, and as a result, they will suffer the most network latency."

security measures. Back this up by making it difficult for them to do so. For example, software can be implemented to detect user misbehavior while the company rolls out a thin client infrastructure that eliminates user sabotage completely. Similarly, standard desktop images can be deployed that make it easy to quickly refresh desktops and provide users with roaming profiles that follow them regardless of where they are.

"Standardization and automation at the desktop level is the name of the game to control desktop support costs," says Sabine Waterkamp, president of managed service provider ACSLA (www.acsla.com).

Providing High-Quality Support

One of the biggest problems in providing IT support with a limited staff is maintaining high quality, particularly when the support team is struggling with a backlog of support issues. When the call volume is low, maintaining quality support is easy, as extra time is available to spend with the user to make sure all issues are resolved rapidly.

Raul Duran, a field engineer for network monitoring vendor Plixer (www.plixer.com), recommends taking advantage of the lulls in traffic to really take care of user problems. The goal, he says, isn't to drag a phone call on as long as possible, but to give users a sense that everything is going to be OK and to really make sure that everything is working as intended and that all problems have been fixed.

"Going the extra mile during quiet periods and proactively making sure all problems are resolved in times of low volumes pays dividends when support volume is heavy," says Duran.

Users who have been well serviced during off-peak periods typically are in a better mood during a busy period even if they have been on hold for a while and are thus less likely to let frayed tempers lengthen calls unnecessarily. In addition, by resolving several issues—even those the end user wasn't aware of, such as virus updates and patches—support begins to get ahead of the game. They aren't left having to update each and every machine during a dire emergency.

"This approach seems to create a snowball effect," says Duran.

Establishing Accountability

Not all help desk workers are created equal: Perhaps three support reps are great, and one is considerably less so. That one rep could be poisoning the reputation of the company unbeknownst to management. But how do you know? The answer is to have a system in place that realistically measures support staff efficiency. Measure how long each person talks to a customer, the percentage of problems solved, and other statistics.

Such tools are readily available from help desk, telecom, and IT vendors and make it easy to measure who is fixing problems in a timely manner and who is not. Remedial action can then be taken to improve overall quality.

"It is unrealistic to assume support techs know everything, but it is realistic to expect them to know where to look for possible answers," says Duran. "A support tech [keeps the] end user focused on facts, asks probing questions to find the root cause, and resolves the root problem that generated the call in the first place."

If such skills are missing, it becomes readily apparent in the statistics. Training and call escalation can be implemented so that calls don't drag out and users don't hang up in frustration.

Top Problem: Making A Collaborative Effort

It is difficult for one technical support representative to know the answer to every single query or bug. The solution is to involve everyone as a team to combine their efforts and effectively resolve issues.

"Communication between the available reps is huge in end user support," says Jeremy Buck, lead support technician at Diskeeper (www.diskeeper.com). "The research of one rep combined with the know-how of other reps results in a common understanding and fast resolution."

Having a tech support team that really works together to assist employees is the best way to get around the traditional "cold and uncaring" image of tech support. If users know a call will find a friendly ear, technology initiatives tend to be much better received.

News

EPEAT Environmental Product Ratings Coming To Servers

When consumers go shopping for green electronics, they know to look for logos such as Energy Star and 80 Plus on the box. These recognizable imprints signify that the products inside are designed to meet power efficiency standards.

The Green Electronics Council's EPEAT, or Electronic Product Environmental Assessment Tool, goes even further.

"The overarching goal of EPEAT is to drive environmental improvement by creating a market advantage for electronic products that reduce impact to the planet," says Jeff Omelchuck, executive director of EPEAT. "We do this by making EPEAT an easy way for purchasers to specify and identify green electronics. EPEAT covers a very broad range of environmental attributes, from energy consumption to toxics to recycling, and our Bronze/Silver/Gold rating system makes it easy for purchasers to make the right decision based on their values."

And the federal government is listening, Omelchuck says. "The U.S. government has been a major supporter and user of EPEAT since its inception, purchasing nearly 2 million EPEAT-listed systems since 2006. Thirteen of the 22 federal agencies reported meeting the government's goal of 95% or higher EPEAT purchasing in their 2008 IT acquisitions."

As environmental and energy issues have come to the fore, entities and governments around the globe have expressed interest in EPEAT, too. So the organization recently expanded its registry to empower tech buyers in 40 countries, including China, Taiwan, Japan, Brazil, and Canada.

More Customizable

Omelchuck says that the registry is more customizable now, accommodating many differences among nations. "[It] allows participating manufacturers to register products on a country-specific basis, enabling purchasers to select products based on the specific environmental attributes available to them," he says.

"The international EPEAT registry features approximately 1,300 products and more than 30 manufacturers," Omelchuck says. "More than $60 billion worth of purchase contracts now require that products be EPEAT-registered."

However, thus far, EPEAT's 51 criteria for certification have only focused on client and consumer technology. The current list of certifiable products includes workstations and thin clients as well as desktops, laptops, and monitors. Equipment for the data center, including servers and other gear and portable electronics for the mobile workforce, have thus far not been included on the registry. This, too, is about to change, Omelchuck says.

"Stakeholders are in the process of developing standards for televisions, printers, and copiers. Servers and mobile devices will follow shortly thereafter.

"With information and communications technology usage responsible for more than 2% of the world's greenhouse gas emissions, EPEAT is playing an important role in greening electronics and charting a low-carbon economy."

by Marty Sems

PRODUCT RELEASES

Do you have a new product that data center/IT managers would be interested in learning about?

Send your press release or related product information to press@processor.com.

CLIENTS

■ Boxlight Pro5000SL Projector

Boxlight released a 5,000-lumen projector with a 1,024 x 768 resolution called the Pro5000SL ($3,950). The company says the projector is designed specifically to meet the needs of systems integrators. The projector includes three lens options ranging from 1.8 to 4.1 throw ratios. Other features include LAN control with Web access and email monitoring abilities, network management, and quick startup and cool-down times. Automatic ceiling mount detection, keystone correction, and brightness detection is included. Optional features include a HEPA filtration system that includes an automatic filter alert that works with Boxlight's Network Management Software.

■ LXE MX9 Series Ultra-Rugged Computers

LXE released the MX9, MX9CS, and MX9HL Ultra-Rugged handheld computers that it says are designed for use in heavy industrial and outdoor data collection settings. The MX9 model, which has an IP67 rating, includes a display that's viewable outdoors, multiple scanning and imaging options, optional integrated GPS, backlit keyboard, 802.11a/b/g, WWAN, and Bluetooth. The MX9CS model ships with low-temp operating batteries and built-in heater control abilities, while the MX9HL includes Class 1 Div. 2 Hazardous Location compliancy. All three models include a PXA320 CPU, Windows CE 5.0, and LXE's Tough-talk technology for voice-recognition applications.

■ Motion Computing Motion Clinical Workstations

Motion Computing announced a line of highly flexible and fully integrated MCWs (Motion Clinical Workstations), which are designed to support a broad range of clinical workflows in healthcare and other settings. Built to fully integrate with the C5, Motion's MCA (mobile clinical assistant), the MCWs support a variety of workflows and environments. Models in the MCW line include the MCW-50, MCW-100, and the MCW-200.

■ Sunnytek SNT-SAC2131TL, SNT-SAC3141TL & SNT-SAC3051TL

Sunnytek released a series of trayless backplanes that includes three models: SNT-SAC2131TL, SNT-SAC3141TL, and SNT-SAC3051TL. All three models support SATA/SAS interfaces; SATA-1, SATA-II, and SAS drives; and feature aluminum construction, screwless HDD mounting, mechanical sliding locks, and integrated LED power indicators. The SNT-SAC2131TL features one 5cm replaceable cooling fan, while the other models include two fans. The SNT-SAC2131TL provides two 3.5-inch bays for three drives, while the SNT-SAC3141TL offers three 3.5-inch bays for four drives, and the SNT-SAC3051TL has three 3.5-inch bays to accommodate five drives.

■ Sybase PowerBuilder 12 Beta

Sybase announced a beta version of PowerBuilder 12, the latest generation of Sybase's development tool. This release of PowerBuilder provides developers with a fast, cost-effective path to the Microsoft .NET Framework. Sybase will ship PowerBuilder with two self-contained modules, one designed for Windows 32-bit-based development and a new comprehensive module for developing Windows Presentation Foundation-based applications on top of the Microsoft Visual Studio shell. PowerBuilder 12 works in conjunction with the Visual Studio infrastructure to increase productivity for the .NET Framework, which enhances development of Windows Presentation Foundation applications.

■ Wyse Technology Wyse C Class Thin Clients

Wyse Technology released its Wyse C class high-performance thin clients, which support Wyse's WSM zero-client provisioning software. The Wyse C class ships with VIA's C7 1GHz processor and a hardware graphic accelerator that is capable of video and multimedia playback up to 1080p HD. The Wyse C class meets the Energy Star Version 5.0 specification, drawing just under 7W of power. C class offerings come with the Wyse Device Manager software for comprehensive and secure thin client management, secure HTTPS-based communications, powerful device policy, and configuration management. Other features include DVI-I dual display video output, two PS/2 ports, optional 802.11 b/g/n, Kensington Lock Slot, 10/100/1000 Base-T Ethernet port, and four available external USB 2.0 ports. The C class starts at less than $350.

NETWORKING & VPN

■ Akorri BalancePoint 3.0

Akorri launched BalancePoint 3.0, which is an updated version of its virtual infrastructure management software. BalancePoint is designed to provide visibility and control so IT staff can troubleshoot and assure performance, plan server and storage capacity, and manage service levels, in order for organizations to move through the stages of server virtualization adoption. The troubleshooting analysis includes virtual CPU efficiency and SAN switch analysis, and the optimization and planning analysis features a VM performance index and Microsoft and VMware cluster support, along with other tools. Additionally, BalancePoint 3.0 supports VMware vSphere 4 and 3PAR InServ Series.

■ BMC Software Batch Impact Manager

BMC Software unveiled a new offering in its BMC Batch Impact Manager solution, designed to decrease the time it takes to resolve IT bottleneck issues in batch environments, which lets users provide business services quicker and more efficiently. It's the only batch processing program that identifies upcoming problems and helps users avoid them. It also offers fixes for the problems. When a process does fail, the software alerts the IT staff, outlines the problem, and offers a step-by-step solution.

■ Firetide HotPort 7000

Firetide announced a MIMO-based wireless solution called HotPort 7000. The wireless mesh network solution can achieve speeds of up to 300Mbps in outdoor environments, the company says. The solution enables greater flexibility in the design and deployment of a company's infrastructure mesh network and allows the addition of new applications and services on a single network.

■ Infoblox IPAM Freeware

Infoblox launched a new freeware application, Infoblox IPAM Freeware, which offers network discovery and IPAM (IP address management) technology to help customers maintain network availability and security while cutting operational costs. Additionally, it can replace manual processes, custom scripts, and spreadsheets with out-of-the-box automation and graphical tools designed to simplify the monitoring and management of IP devices and networks. The Infoblox IPAM Freeware also offers an easy-to-navigate graphical user interface with a customizable dashboard, which consolidates and automates IP address management tasks to save time and reduce errors and costs.

■ ManageEngine APIs For Site24x7

ManageEngine announced the availability of APIs (application programming interfaces) for its SaaS-based Web site performance monitoring solution, called Site24x7. The APIs allow service providers to offer customized Web site monitoring services and enterprise administrators to integrate Web site monitoring into existing business applications. The APIs can monitor any Web site from 15 locations and are offered in four versions: Free, Standard, Premium, and Enterprise.

■ NetApp 10Gb Ethernet Infrastructure

NetApp unveiled its end-to-end 10Gb Ethernet infrastructure that consists of the next-generation FCoE unified target adapter, Ethernet switch, and converged network adapters. The platform is built for data centers that require converged Ethernet (FCoE, iSCSI, NFS, CIFS) data access and a standards-based framework for compliance with existing and future components and software. NetApp has partnered with Cisco and QLogic to offer the QLogic 8100 Series converged network adapter and the Cisco Nexus 5000 Series switches, which are designed to help customers migrate to a unified Ethernet environment.

■ Netreo OmniCenter Virtualization Dashboard

Netreo announced OmniCenter Virtualization Dashboard, a tool designed to provide instant visibility for VMware enterprise deployments and allow users to quickly and easily identify performance problem areas. OmniCenter Virtualization Dashboard supports all commercial versions of VMware as well as Microsoft Windows 2000/2003/2008 and Linux. Features include detailed real-time alerting and historical information about host systems; the ability to manage multisite virtual host environments quickly, easily, and inexpensively; and a single view for all hosts.

■ Neverfail vXtender

Neverfail announced the release of vXtender, which can extend virtualization benefits to applications deployed in physical environments. vXtender uses secondary servers running on virtual machines on a single virtual host to ensure the continuous availability of applications that are deployed across multiple production servers. Features include automated application failover, high availability and disaster recovery, data rollback, and server consolidation.

■ SMC Networks TigerStack II 1000 Stackable Managed Layer 3 Switches

SMC Networks announced the line of TigerStack II 1000 Stackable Managed Layer 3 Switches (SMC8926EM and SMC8950EM). The 89-Series TigerStack II 1000 switches provide 10/100/1000Mbps (Gigabit) connectivity via 24 or 48 ports. They support up to 200 high-speed nodes, IPv4 and IPv6, and 50Gbps High Gigabit stacking, SMC says.

■ Solarflare Communications SFC900 Controller Family

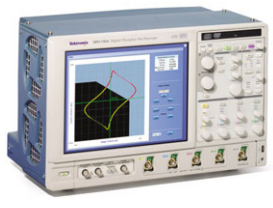
Solarflare Communications released a family of 10GbE controllers that includes what the company calls the industry's first 10GBASE-T LOM (LAN-on-motherboard) product. Members of the controller family include the Solarstorm SFL9022 dual-port LOM, Solarstorm SFL9021 single-port LOM, and Solarstorm SFC9020 dual-port controller. Performance features include sub-6ms latency, which in addition to assisting real-time critical applications, improves response time and application performance in various areas, including Web 2.0, cloud computing, seismic imaging, finance, and biomedical fields. Other features include a fully virtualized architecture and the prioritization and management of IP flows. The LOM feature enables backward compatibility with 1000BASE-T Ethernet and support for installed cabling.

■ Sybase SQL Anywhere, Sybase IQ & Sybase Adaptive Server Enterprise For Amazon EC2

Sybase released a line of management servers designed for Amazon EC2 (Elastic Compute Cloud): Sybase SQL Anywhere, Sybase IQ, and Sybase Adaptive Server Enterprise. Sybase has optimized its servers for flexible deployment in the Amazon EC2 environment. Sybase SQL Anywhere server supports workgroup, mobile, and Web applications. Sybase IQ works with high-performance analytics, and Sybase Adaptive Server Enterprise controls management transaction systems.

■ Tektronix XGbT

Tektronix released XGbT test automation software and text fixtures, a one-button solution for the full range of 10GBASE-T measurements. The oscilloscope-based solution is low-cost, removes complexity, and improves usability, compared to competitive 10GBASE-T test solutions that require the use of up to three separate instruments. By using the Tektronix solution, 10GBASE-T designers and validation engineers have the ability to improve efficiency. The 10GBASE-T software is built on the TekExpress test automation framework, which enables additional automation steps that may be required for unique measurement needs, such as one-button control of a Tektronix AWG7000B Series Arbitrary Waveform Generator for return loss measurements.



■ Tranxition AdaptivePersona

Tranxition introduced the AdaptivePersona user virtualization program, which virtualizes the desktop personality, including user customizations and data, in and outside of the Windows profile, in order to cut IT costs and

PRODUCT RELEASES

boost user productivity when an environment is modified or fails. AdaptivePersona uses Tranxition personality hypervisor and SmartShadow technology. The personality hypervisor provides virtual personalities to desktops when needed. SmartShadow offers thesaurus capabilities that store and translate abstracted user customizations between different OS and application versions.

■ TRENDnet Wireless N Travel Router Kit

TRENDnet announced the availability of its 300Mbps Wireless N Travel Router Kit. The router is small enough to fit in a pocket, measuring only 2.5 inches wide and 3.25 inches long, and comes with a carrying case, a 3-foot Ethernet cable, a power adapter, and a USB power cord. The router itself has a reset button, a 10/100Mbps WAN Ethernet port, and an LED display that shows power and link status.

■ Wyse Technology TCX Virtualization Software Suite

Wyse Technology introduced the latest version of its TCX virtualization software suite, which includes Adobe Flash acceleration technology for improved desktop virtualization. With the latest version of TCX, users will no longer encounter the Flash content-quality challenge for VDI and Terminal Services environments. The offering also enables interoperability between Microsoft RDP and Citrix ICA/HDX protocols and Flash Player 9/10 and Internet Explorer 6/7. Other supported software includes VMware View, Citrix XenDesktop, and Windows XP Pro/Vista/Windows 7. The Flash acceleration technology is slated for an October release on Wyse's V class and R class thin clients.

PHYSICAL INFRASTRUCTURE

■ Black Box JPM4000A

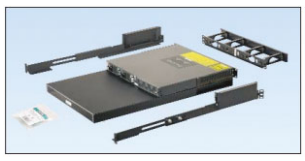
Black Box introduced the JPM4000A (a NEMA 4-rated fiber optic wallmount enclosure), which protects fiber terminations in damp environments. It features four watertight cable openings and a rubber gasket around the door to prevent condensation and splashing water—as well as dirt and dust—from contaminating fiber terminations. The enclosure accommodates two fiber optic trunk cables and can hold up to four fiber adapter panels. There's also room to mount a splicing tray. The cabinet features a hex nut security lock and can be mounted on solid surfaces, such as a cinder block wall. The JPM4000A also includes cable management rings, cable ties, and ID stickers.

■ Chatsworth Products N-Series TeraFrame Network Cabinet

Chatsworth Products released the N-Series TeraFrame Network Cabinet, which is designed to accommodate the Juniper Networks EX8200 line of modular Ethernet switches. The N-Series TeraFrame offers a Network Switch Exhaust Duct designed to capture hot exhaust air from the side of the switch and direct it away from the cabinet. In hot aisle/cold aisle layouts, it also changes side-to-side airflow into a front-to-rear airflow pattern. Additionally, there are 3-inch gaps where the side of the switch and duct meet in order to let the EX8200 modular switches fit inside the N-Series and segregate hot exhaust. This eliminates the recirculation of exhaust air and helps keep equipment operating temperatures safe.

■ Panduit CDE1 Modular ToR Switch Inlet Duct

Panduit unveiled a cooling duct designed for switches only 1U tall. The CDE1 modular ToR switch inlet duct, part of the company's NetAccess line of Cisco-compatible cabinet products, fits Cisco Catalyst 4924, 4928, and 4948 switches. The inlet duct can be retrofitted to switches already installed in a rack, Panduit says. The company states that by providing a path for cool air to the switch, such as with the CDE1, overall data center temperatures can be set higher for energy savings.



■ RF Code Wire-Free Liquid Detection Sensor

RF Code announced the release of a real-time liquid detection sensor boasting thin-film technology, wire-free environmental monitoring, and vulnerability mitigation. Features include no leak detection downtime, Sensor Manager software, condition alerts, and scheduled ad-hoc reporting. RF Code sensors are designed to monitor floor-mounted pipes, raised floors, water delivery systems, and air-conditioning units.

■ Server Technology CW-24V4 Mixed-Outlet Cabinet Power Distribution Unit

Server Technology released the CW-24V4 mixed-outlet cabinet power distribution unit, a 3-phrase CDU with 32 amps combined with 18 IEC C13 outlets and 6 IEC C19 outlets. Using the Web-based GUI, administrators can connect though an IP, network, or serial connection or the SPM (Sentry Power Manager) software system. The local current LED monitors feature True Digital RMS current monitoring in order to balance load operations. The Switched CDU incorporates temperature and humidity monitoring.

■ Server Technology Smart Power Monitor Product Line

Server Technology unveiled its Smart Power Monitor product line. The monitors add environmental monitoring to server cabinets and provide input current load and power monitoring via Web GUI. Smart Power Monitors offer redundancy and dual outputs for two PDUs, and true RMS current monitoring optimizes redundancy loads. The Smart Power Monitor options include several voltages and amperages. The product line supports monitoring via serial interface, Web interface, or SPM (Sentry Power Manager).

SECURITY

■ CRYPTOCard ICE

CRYPTOCard announced its ICE (In Case of Emergency) solution for disaster recovery that is designed to help enterprises avoid interruptions in operations. It is available as either a server solution, BlackShield ICE, or cloud-based service, CRYPTO-MAS ICE, compatible with other two-factor authentication systems. To improve secure business continuity, CRYPTOCard ICE safeguards login procedures for staff through pooling software or SMS two-factor authentication.

■ e-DMZ Security Total Privileged Access Management Suite

e-DMZ Security announced enhancements to the TPAM (Total Privileged Access Management) Suite, which includes tools designed to protect organizations from remote access-based attacks by eliminating or restricting access via role-based controls that include denying malicious or accidental downloading of restricted information. Among the upgrades are the ability to remotely manage complete user access and privileges, the ability to record sessions and control, and the ability to delegate privileged user access down to specific commands across Linux and Windows environments.

■ HyTrust Appliance 1.5

HyTrust announced HyTrust Appliance 1.5, the latest iteration of its centralized access control, template-based security configuration and audit-quality log aggregation for the hypervisor. HyTrust Appliance 1.5 is designed to deliver enterprise-class, object-based policy management. Built specifically for security and compliance policy enforcement of virtual infrastructure, version 1.5 includes features such as support for VMware vSphere (ESX 4.0 and vCenter 4.0), support for VMware ESXi, two-factor authentication including RSA SecureID, label-based policy enforcement, and VM-to-host and VM-to-network segment control.

■ Motorola AirDefense Wireless Vulnerability Assessment

Motorola launched its wireless security technology, the Motorola AirDefense Wireless Vulnerability Assessment. IT administrators can now locate and quarantine network vulnerabilities and automatically report system sensitivities. The Motorola AirDefense Wireless Vulnerability Assessment solution operates alongside the Motorola AirDefense Enterprise Wireless Intrusion Prevention System by simulating a wireless client station to remotely assess target networks. Other features include wireless network segmenting and wireless scanning automation.

■ StoredIQ Classification-Based Security

StoredIQ announced the release of its classification-based security, which delivers precise control for granting access to potentially responsive data for audits, investigations, and e-discovery requests based on content classification such as server, share, or directory structures. Classification-based security enables enterprises to create a classification that can be reviewed by a legal team without having to move data or temporarily change security privileges.

STORAGE

■ Buffalo Technology TeraStation III

Buffalo Technology announced it is offering SMEs an economical, small-footprint network storage option with the release of its rackmount unit, the TeraStation III. The TeraStation III features Web access, power management, hot spare/swap, replication, and Mac Time Machine support. TeraStation III models include the TS-RX2.0TL/R5 (2TB, $1,299.99), the TS-RX4.0TL/R5 (4TB, $1,799.99), the TS-RX6.0TL/R5 (6TB, $2,299.99), and the TS-RX8.0TL/R5 (8TB, $2,999.99).

■ Certeon aCelera Sync

Certeon released aCelera Sync data backup and replication acceleration software. aCelera Sync enables disaster recovery over the WAN to reduce backup and replication times by up to 97% without needing proprietary hardware appliances. It's designed to remove network problems, such as low bandwidth, high latency, contention, and packet loss, and enable enterprises to quickly and efficiently achieve recovery time objective and recovery point objective goals. aCelera Sync software is symmetrically deployed on industry standard servers at the data center, remote offices, and mirrored sites connected over a WAN. The software also increases the speed of remote backup for several backup and replication solutions, including products from EMC, CommVault, Double-Take, EqualLogic, FalconStor, Network Appliance, and Symantec.

■ Cobalt Computers/Sonasoft SonaSafe Integrated Archiving, Replication & Backup & Cobalt C3

Cobalt Computers announced that it will team up with Sonasoft and provide their legacy product, called SonaSafe Integrated Archiving, Replication, and Backup software, to about 20,000 Cobalt customers. In combination with the SonaSoft software, Cobalt is introducing its Exchange email archiving appliance series, called C3 (Complete Communication Compliance), which will let enterprises protect against litigation risks while optimizing their Exchange server storage infrastructure and improving employees' day-to-day email records and access management.

■ Dell/EMC CX4 Storage Arrays & ProConsult Services

Dell and EMC announced high-speed storage and networking solutions that come with support for 10Gbps Ethernet, 10Gbps iSCSI, and 8Gbps Fibre Channel using the UltraFlex connection system. Upgrades to the line include power-saving drive spindown support and EMC Navisphere management software, which is compatible with virtualization. Finally, EMC RecoverPoint and EMC Replication Manager software offer data protection. Also announced is the Dell/EMC ProConsult services for Dell/EMC environments, covering SAN architecture design, local and remote data protection, and backup software integration.

■ EMC Disk Library For Mainframe

EMC announced it is offering twice the capacity and throughput in its DLm (Disk Library for mainframe) system. Using Celerra storage systems and new virtual tape engines, the DLm can provide disk-based tape replacement storage to IBM zSeries mainframes. With the latest improvements, the system can reach 1.2GBps and scale up to 1.2PB in 13 cabinets.

■ IBM System Storage DS5020 Express

IBM unveiled the IBM System Storage DS5020 Express, which is a new storage disk offering designed to provide enterprise-class storage capabilities for midrange enterprises. The System Storage DS5020 Express disk system offers 8Gbps Fibre Channel along with an iSCSI host capability that incorporates into both new and existing infrastructures. The system is engineered to give balanced performance in order to handle mixed workloads created by consolidation, and the modular architecture reduces acquisition and operational costs. The DS5020 can also add incremental capacity with no downtime when it's time to expand.

■ IBM System z Solution Edition Series

IBM introduced its System z Solution Edition Series, which consists of seven offerings that address critical needs in data warehousing, electronic payments, and disaster recovery. Products in the new hardware/software line include System z Solution Edition solutions for data warehousing, application development, GDPS (Geographically Dispersed Parallel Sysplex), enterprise security, ACI, and WebSphere. IBM also updated the pricing for its Integrated Facility

PRODUCT RELEASES

for Linux, which lets users easily migrate from Sun and HP servers to the Linux platform on IBM's System z.

■ IceWEB Iplicity VM Data Center Add-In Module

IceWEB released the VM Data Center add-in module for Iplicity, which enables the management and presentation of underlying storage for virtual servers, and the virtualized storage space can be offered to them through NFS, iSCSI, or Fibre Channel. According to the company, this can save time, increase flexibility, and help enterprises move closer to elasticized cloud computing.

■ NetApp Data OnTap 8 & DS4243 Disk Shelf

NetApp released Data OnTap 8, which the company says that in addition to assisting customers moving to an ITaaS (IT-as-a-service) foundation will serve as a current and future cloud infrastructure foundation. NetApp says this release builds upon existing Data OnTap platforms of internal and external cloud computing deployments with enhanced functionality for virtualized and shared infrastructure settings, such as nondisruptive data mobility, dynamic growth through scale-out architecture, and 64-bit storage aggregates supporting multi-petabyte deployments. Other improvements include better data management abilities and tighter integration with data center management systems. NetApp also released the DS4243 disk shelf, which is a SAS/SATA disk subsystem that lets enterprise customers streamline data footprints using the subsystem's 24TB-in-4U design.

■ Quantum DXi7500

Quantum released the latest deduplication advancements for the DXi7500, including disk backup hardware for NAS (network-attached storage) and Symantec OpenStorage API architectures. The DXi7500-N features six GbE ports, two Fibre Channel ports, and OpenStorage direct tape creation. The DXi7500 also supports Oracle Secure Backup, Atempo Time Navigator, and Shadow Tape Creation. Shadow Tape Creation capabilities are compatible with Symantec Backup Exec, CA ARCserve, and BakBone NetVault. Each configuration of the DXi7500 hardware is $140,000.

■ SanDisk Cruzer Enterprise Secure USB Flash Drives

The Cruzer Enterprise USB flash drives now meet federal standards, SanDisk says, and thus are now an option for government employees. The drives have been certified to comply with Military Standard 810-F environmental standards as well as Section 508 requirements for use by the visually impaired. Already compliant with FIPS (Federal Information Processing Standard)

140-2 Level 2 encryption requirements, the Cruzer Enterprise is about to receive CAC (Common Access Card) and PIV (Personal Identity Verification) features, too, the company says, in order to meet Department of Defense and FIPS 201 standards.

■ Spectra Logic BlueScale 10.6

Spectra Logic launched the latest version of its BlueScale intelligent remote storage management software, which lets users keep track of the health status of media and hardware, reduce unscheduled site visits, lower costs, and decrease resource requirements. BlueScale 10.6 is fully integrated into Spectra T-Series tape libraries, providing users with numerous additional features, such as the "hot spare" drive available for tape libraries, proactive notification of potential hardware failure with Hardware Lifecycle Management, and auto-discovery of new media through its Media Lifecycle Management enhancements. BlueScale 10.6 is available on the T-Series tape library product line.

SPECTRA
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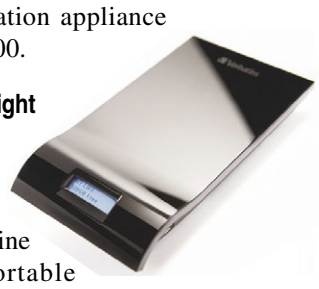
■ Spectra Logic nTier Deduplication

Spectra Logic unveiled its nTier Deduplication, which is an integrated system for deduplication, remote site replication, and automated migration to tape ideally suited to small and medium-sized enterprises. nTier Deduplication lets users add capacity to installed appliances as needed and features the ability to share deduplication catalogs among remote sites. Spectra Logic's nTier Deduplication supports speeds up to 900MBps and works with several backup suites, including Symantec Backup Exec and NetBackup, CommVault Simpana, CA ArcServe, HP Data Protector, and SyncSort Backup Express. The base model nTier500 v80 Deduplication appliance starts at $23,500.

■ Verbatim InSight Portable USB Hard Drives



Verbatim announced a line of InSight portable USB hard drives, which are designed with durable enclosures and an always-on display to let users view available free space. The palm-sized external hard drives come in 320GB or 500GB capacities, enabling Windows and Mac users to instantly add extra storage to their notebooks or desktops. Nero BackItUp Essentials is built in to allow full, automatic system backup and restore functions, and it guides the user in setting up scheduled backups by date and/or time. Nero BackItUp Essentials also offers data encryption with password control options. The 2.5-inch drives have a 5,400rpm spindle speed, 8MB of cache memory, USB 2.0 port, and transfer speeds of up to 480MBps.

■ Verity Systems Lighting Tower Duplicators

Verity Systems released a line of Copy Protected Lighting tower duplicators that include built-in copy protection technology that provides a simple but effective antirip approach to protecting DVD video. The company says the duplicators are the only ones on the market to feature hardware-based copy protection to discourage unauthorized duplication. Usage doesn't require a PC or proprietary software to create copy-protected discs, meaning there's no per-copy royalty to pay or need for software licenses. Verity says the technology embeds copy protection within each disc, making them nearly impossible to copy via another computer or duplicator. The series' drives start at $939 for a 1:3 drive duplicator.

TechExecs
Senior IT Executives Network

The Search For Capabilities Within

Enterprises Need Better Ways To Share Knowledge

THIS PIECE IS AUTHORED by Anthony Huang (arh@techexecs.net), founder of TechExecs Network: A Senior IT Executives Networking Organization (www.TechExecs.net). Bjarke Ormstrup has served on the TechExecs CIO Panel. As a CIO-level subject matter expert in B2B and B2C services and distribution, Ormstrup knows the challenges companies face trying to offset shifts in the economy. He shares his insights as a senior IT executive.

Bjarke Ormstrup is director of IT, PBD Worldwide Fulfillment Services. To reach Ormstrup, contact administrator@techexecs.net.

Huang: Tell us a little about what you do and what PBD does.

Ormstrup: As the director of IT at PBD, I have two main focus areas. The first is to drive technology-oriented innovation to expand PBD's solutions and services. I also have a traditional IT role where I am responsible for the IT infrastructure and application development for PBD staff and clients. PBD Worldwide Fulfillment Services provides fulfillment and customer support services for B2C and B2B clients.

Huang: How do downturns in the economy cause changes in your role?

Ormstrup: We handle millions of items across our internal information-based system and our warehouse and distribution system. When there is a shift in the economy, we are the first to notice the change. Our infrastructure is equipped to handle these changes. But budgetary changes affect the way we spend our IT dollars, and my focus is identifying new solutions that will help our clients.

When I speak with other CIOs at enterprise-level companies, one of the key things I find is that when new solutions need to be identified and executed from within, demands for diverse knowledge and skills become critical. You need flexible team players who quickly can be assembled. We often look within first to see if we already have a resource in our company that may have the ability to perform a new role or help in an area where we have a tremendous need.

Huang: Are you seeing this development of looking within as a trend?

Ormstrup: The problem IT management faces is that you need to do something, you do not have the budget to hire an army of consultants, and you cannot just hire additional people—it simply would be too expensive or take too long. In addition, you need the right knowledge and skills for your organization's culture. With the social networking wave, several external-facing options are available both to get connected with experts and get answers to questions.

I think that some of the external-facing tools are being repurposed to inside the organization to allow for more casual use to search for expertise. The challenge is the data is not organized well, the search tools return an overwhelming number of results, there is limited ownership for the data quality, and the interactions are casual and unscheduled.

Huang: You mentioned that "peer-to-peer-level connection" is needed. What do you mean by that, and how will that add value for the internal enterprise?

Ormstrup: Co-workers in organizations are not connected. Peer-level networking does not naturally take place. Knowledge and capabilities should be leveraged and shared as resources that could be used to accelerate a project or assignment to help the company.

Huang: Are you proposing there should be some additional investments in the area of peer-level networking? What would this solution look like?

Ormstrup: I think we're looking for well-known tools mixed with new features and applied with new and exciting processes. On one hand, employees needing the help require easy and familiar ways to connect with others. Instead of searching through data, reports, or address book entries, employees must be able to describe the need and quickly get access to help. On the other hand, we need to make it easy for employees with specific knowledge and experience to engage. In addition to making the interactions more structured, it is important to address the ways employees are motivated —through rewards, recognition, influence, and the "greater good." Why not try to cover all of these when establishing a solution?

Huang: What will the next generation of social applications look like?

Ormstrup: At the end of the day, it is still about work. Major enterprises that have large intranets would want to adopt key traits of social networking; however, it will be focused on enabling staffs to do more and count on each other more. I see only minimal value in befriending a lot of co-workers. Connecting with co-workers to solve specific challenges in a trusted environment benefits both the individuals and the organization. P

UPCOMING TECHEXECS CIO PANEL FORUMS

TechExecs has a number of learning and networking forums this fall. All readers of *Processor* can attend for free.

- **Sept. 17 - Chicago**
  www.techexecs.net/chicago.htm
- **Sept. 23 - Silicon Valley**
  www.techexecs.net/siliconvalley.htm
- **Sept. 24 - Los Angeles**
  www.techexecs.net/losangeles.htm
- **Sept. 24 – Atlanta**
  www.techexecs.net/atlanta.htm
- **Oct. 6 - San Antonio**
  www.techexecs.net/sanantonio.htm
- **Oct. 7 - Austin**
  www.techexecs.net/austin.htm
- **Oct. 8 - Dallas**
  www.techexecs.net/dallas.htm
- **Oct. 8 - Washington Chapter**
  www.techexecs.net/washingtondc.htm
- **Oct. 15 - Houston**
  www.techexecs.net/houston.htm
- **Oct. 29 – Seattle**
  www.techexecs.net/seattle.htm

CyberView™
dedicated KVM Switch and
rackmount screen technology

1U 20”
LCD KVM Drawer

Matrix Cat6 KVM

1U 19” Widescreen
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1U Dual Slide 17”
LCD KVM Drawer

8U 19” Widescreen
LCD Quad Display

8U 22” Widescreen
LCD 1680 x 1050

1U 20” LCD Drawer
1600 x 1200

Austin Hughes
At Austin Hughes, we are committed to providing our customers with quality products and excellent services.

Quality Commitment
We insist upon using quality components in our products such as the Samsung A++ class LCD panel, which has an extended product life of more than five years. With an average defect rate of less than 1% during our two-year free service warranty, we want to ensure our customers’ complete satisfaction.

Service Commitment
Our California service center is dedicated to provide outstanding services to our customers; we complete most RMA repairs within seven working days.

Full Range Product Series
In addition to our excellent services, we offer a full range of products such as LCD KVM drawers, LCD display panels, keyboard drawers and KVM switches to meet our customers’ needs.

Please contact our distributors for product inquiries.

AUSTIN® HUGHES

PDUs Direct To You

Top Quality At The Lowest Price Available

by Blaine Flamig

• • •

Premium power distribution without the premium price. Such a notion may sound too good to be true in today’s sagging economy, but such an approach is precisely the customer-oriented mission PDUs Direct (www.pdusdirect.com) was built on and continues to operate by.

As the online wholesaler of basic, metered, and switched PDUs from long-time PDU maker Server Technology’s product line, PDUs Direct is dedicated to providing its customers the highest quality in-rack power strips, power distribution, and rack PDUs offered at best-in-class prices.

Established in November 2008 at the outset of the economic downturn, PDUs Direct understands the financial, cost-cutting challenges now facing SMEs. That’s why PDUs Direct is committed to supplying its customers with industry-standard, industrial-grade PDUs suitable for network and server environments at prices falling 10 to 20% below competitors’ online prices. PDUs Direct’s customer commitment extends to the company’s easy-to-use, uncluttered Web site, which makes locating the right PDU a quick, streamlined process without skimping on the pertinent product information customers require.

PDUs Direct’s dedication to its customers is seen through its next-business day shipping policy; 100% satisfaction, 30-day money-back product guarantee; and ultra-convenient email and live chat technical support options. Whether the question or concern is in regard to a product, order, or application, PDUs Direct’s chat support pairs customers with live operators who possess years of real-world PDU experience and knowledge. Customers can even request a chat transcript for reference following a chat session.

PDUs Direct power distribution units are constructed in steel-case enclosures, available in a variety of outlet and power-level configurations, and ship with a customer-selected power cord. Each switched PDU sold also includes the latest firmware from Server Technology and fully networked outlet management and power and environmental monitoring abilities. P

PDUs direct

c o n t a c t

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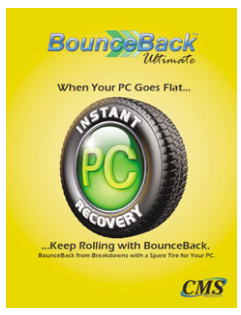
(product, application, and order inquires)
support@pdusdirect.com *(tech support and return inquires)*



Simple & Quick Backup & Recovery

CMS Products BounceBack Ultimate

by Seth Colaner

• • •

Every data center employee knows the necessity of backup and recovery solutions. CMS Products’ BounceBack Ultimate is designed to be a “digital spare tire” for PCs, allowing users to back up and restore the entire contents of a PC, including applications, data, personal settings, operating system, partitioning, and formatting.

Features include Instant PC Recovery, which lets users start up a PC from an external USB hard drive in case the operating system or hardware malfunctions, and instant One-Button Recovery, which is a simple and direct way of restoring a PC hard drive without the need for reinstalling anything. The QuickRestore function also lets users quickly restore specific files and folders.

Other features include CDP (Continuous Data Protection), a function of BounceBack Ultimate that continuously keeps new or modified files up-to-date; the ability to let Bounce-Back Ultimate run its processes in the background so users can continue to work while the program takes care of business; and easy-to-configure AES 256-bit en-cryption to secure your data from prying eyes.

BounceBack Ultimate also lets users back up to multiple media, such as an external hard drive or network drive, simultaneously so users can have multiple concurrent backups. With synchronization capabilities enabled, users can save a backup of their projects on a backup drive and use the drive on other computers. When the drive is again connected to the original computer, BounceBack Ultimate automatically syncs the changes, ensuring you’re always working with the most up-to-date files. Users can also schedule backups and create backup sets.

CMS PRODUCTS

CMS Products
BounceBack Ultimate

Full download: $89
Full CD: $99
Upgrade download: $69
Upgrade CD: $79

Lets users back up and restore the entire contents of a PC.

(800) 327-5773

www.cmsproducts.com

PRODUCT SPOTLIGHT

Data Center Server Racks & Cabinets

42U Liebert Server Racks

42U's Liebert Server Racks allow for easy, flexible mounting of 19-inch servers and accessories. Perforated doors with an 83% open area offer optimal thermal management and reduce obstructions to airflow with a complete cable management system. Liebert Server Racks are designed with two goals in mind: optimizing airflow and maximizing usable mounting space.

- Easy-to-move with a lightweight aluminum frame
- Tool-less shelves and cable management on frame
- Doors open to 180 degrees for easy access to components
- Available in 42U or 47U, with 24- or 32-inch widths and 40-, 44-, or 48-inch depths

Best For: Data centers, network closets, and telecom equipment.

(800) 638-2638
www.42u.com

CableOrganizer Hoffman COMLINE OSP Wall Mount Cabinets

Hoffman COMLINE OSP Wall Mount cabinets are made of tight-sealing aluminum that provides years of protection for outdoor telecom equipment. With features such as foam environmental seals, top-mounted solar shields, continuously welded seams, air conditioner/heat exchanger gland plates, and a rugged urethane powder-coat finish, COMLINE OSP cabinets can ward off damage from wind, rain, chemicals, and dust.

- Designed to NEMA's 3, 3R, 4, 4X, and 12 standards
- Rack angles can be adjusted from front to rear
- Top-mounted solar shield keeps the cabinet's interior cool and directs water away from its opening
- Padlocking L-handle secures and tightly seals the cabinet's door
- Ground bar and rear-mounting studs included

Best For: Rack-mounting telecom equipment for DSL, fiber distribution, and other applications in harsh outdoor environments.

Price: Starts at $1,604
(866) 222-0030
www.cableorganizer.com

CableOrganizer Co-Location Floor Enclosures

Co-Location Floor Enclosures feature three separate locked, individually keyed compartments, letting you secure and limit access to your IT equipment in shared server room applications. The enclosures feature individual cable access points and internal rails that are adjustable by section, letting each user access and customize her respective section without breaching or disrupting the other users' designated spaces.

- Each section is individually keyed and accessed via its own door
- Individual cable access points and adjustable rails in each compartment, so you can still customize while sharing space
- Ships fully assembled
- Includes two ventilation fans
- TIA/EIA 310D compliant

Best For: Securing equipment in shared server room situations or allowing limited equipment access to service providers in private server rooms.

Price: Starts at $1,441.28
(866) 222-0030
www.cableorganizer.com

Hergo Jupiter-CoLo Enclosure (P.N. 95-JUPIT-000)

Hergo's Jupiter-CoLo multicompartment Co-Location Cabinet is 42U, 24 inches wide and 36 or 42 inches deep. Split-Level Louvered Glass Doors come equipped with Swing Handle Locks, essential for this type of environment where added security is crucial. Each cabinet can be customized with a variety of shelving, cooling fans, power, and cable management.

- Base frame with removable, locking bottom louvered side panels and front and rear sectioned doors with handle lock
- Lock can be upgraded to a combination lock model
- Includes eight 21U mounting rails and four casters (two locking and two nonlocking)
- Meets EIA specifications and accommodates all major servers and peripherals

Best For: Shared server rooms where you need to limit access to authorized users.

Price: Starts at $1,475
(888) 222-7270
www.hergo.com

IMS/AMCO 3G Series Adaptive Server Racks

3G Series server racks by IMS/AMCO Engineered Products adapt to meet the specific needs of varied IT environments and applications. The Pre-Configured Series offers commonly requested consoles with or without side panels, while the Build Your Own models can be configured and custom-built based on individual requirements. Expanded frame heights and depths are available for high-density cable and cooling requirements.

- Welded frame design features a static load rating of 3,200 pounds and dynamic load rating of 2,100 pounds.
- Vented doors offer maximum front-to-back airflow and high-density thermal solutions for larger heat loads
- Adjustable mounting channels feature square holes for M6 hardware mounting and individually numbered RUs
- Full line of expanded vertical and horizontal cable raceways, power distribution, and cooling options

Best For: Data centers in need of a preconfigured rack to save on building time or a custom-built rack to meet individual requirements.

(847) 391-8100
www.imsep.com

NER Data Products' Ultimate Core High Density Cabinet

Highly scalable in size and function, NER's Ultimate Core enclosures accommodate high-density equipment along with high-density power and cabling requirements. Ultimate Core enclosures are available in multiple heights, widths, and depths and can be customized to meet specific customer requirements.

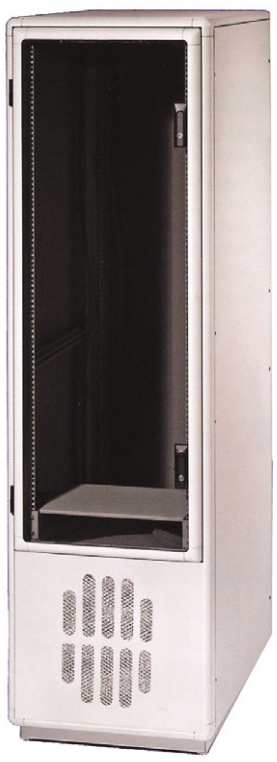
- Available in 24- and 30-inch widths with optional high-density cabling side cars
- 80% perforation options for doors and top panels
- Ships with Van Line service and minimal packaging/waste to help with green focus
- Factory and onsite integration and support available

Best For: Data centers that require high-quality, scalable cabinet solutions designed to house multivendor technologies, including blade servers and network switches.

Price: Starts at $2,500 for a well-equipped 44U 24- x 42-inch Ultimate Core Cabinet
(888) 637-3282
www.nerdata.com

PRODUCT SPOTLIGHT

Compiled by Kris Glaser



Rackmount Solutions Air Conditioned Server Cabinet

Rackmount Solutions' Air Conditioned Server cabinets have built-in air-conditioning units with 4k, 7k, 10k, or 20k BTUs to help protect equipment in warm or dirty environments, such as shops and warehouses. Units are available from 14U to 48U, with depths from 24 to 42 inches.

- Compatible with all leading servers, including blade servers
- Protects expensive equipment from overheating
- Can be paired with a rackmount or side-mount A/C for more space

Best For: Data centers and standalone applications with heat problems.

Price: Starts at $5,633
(866) 207-6631
www.rackmountsolutions.net

Rackmount Solutions 4-Post Adjustable Open Frame Rack

The 4-Post Open Frame Rack by Rackmount Solutions is a versatile rack offering flexibility and ease of use. It can adjust from 21.2 to 35 inches deep and comes with a free set of adjustable angle brackets that securely support shorter equipment. The 4-Post Rack is available in 24U and 42U sizes.

- Open frame design for ease of cabling and optimized cooling
- Adjustable depth prevents obsolescence when equipment changes
- Free angle brackets allow multiple-depth mounting of equipment

Best For: Data centers or standalone installations where increasing server density and reducing rack costs while maintaining working efficiency are important.

Price: $399
(866) 207-6631
www.rackmountsolutions.net

Rackmount Solutions Soundproof Server Rack

Soundproof Server Racks from Rackmount Solutions reduce external sound up to 28.5dBa while dispersing internal heat loads up to 7kW. Built-in casters make it easy to move these servers to another area when the need arises. The Soundproof Racks are available in active and passive versions and in 12U, 24U, and 42U sizes.

- Compatible with all leading servers, including blade servers
- Increases productivity as employees are able to concentrate and better communicate
- Cuts down on workman's comp claims and OSHA problems because of excessive noise

Best For: Data centers and standalone applications needing to reduce noise in the work environment.

Price: Starts at $4,149
(866) 207-6631
www.rackmountsolutions.net

Rack Solutions 4 Post Open Frame Rack

The 4 Post Open Frame Rack by Rack Solutions is a 50U tall rack that increases storage capacity up to 30%, making it both economical and efficient. Smart PDUs provide integrated cabling and power management, while the elimination of front and rear doors creates an open design that optimizes ventilation. The 4 Post Open Frame Rack can be customized with features such as tailored top and floor mounting configurations to match RackSpace flooring.

- Open frame design for optimized air cooling
- Convenient U markings aid in equipment installation
- Custom cable bars improve cable management and enhance PDU access

Best For: Data centers interested in increasing server density, reducing rack costs, and reducing cable installation time.

Price: Starts at $499
(903) 453-0801
www.racksolutions.com

Server Racks Online Vented Server Cabinet

Server Racks Online's 19" 27U and 42U Vented Server Cabinets have two fully vented doors, providing maximum ventilation. Vented Server Cabinets ship with lockable/removable side panels, casters, levelers, and two sets of vertical rails that can be adjusted in 1-inch increments.

- Can be equipped with up to four 4-inch fans for additional ventilation
- Top and bottom cable slots can be removed
- Features cage-nut-style mounting rails
- Currently eligible for free dock-to-dock ground shipping
- Maximum weight capacity of 1,300 pounds

Best For: Data centers in need of a little extra cooling help.

Price: Starts at $1,110 for the 27U version and $1,315 for the 42U version
(866) 722-5776
www.server-rack-online.com

Server Racks Online SharkRack TigerShark 2 Bundle

The SharkRack TigerShark 2 Bundle offers a variety of configurations to match your needs. The basic unit starts with a black 42U SharkRack T2 enclosure that measures 37 inches deep with quick-release doors and a vented top panel. Additional optional accessories include slide rails, fixed shelves, and blanking panels.

- Compatible with equipment from multiple vendors
- Mounting depth can be adjusted to fit needs
- Doors, top and side panels, PDUs, and other devices feature tool-less integration
- Can manage loads up to 2,500 pounds

Best For: Data centers that need customized racks to fit their unique needs.

Price: Starts at $2,677.13
(866) 722-5776
www.server-rack-online.com

PRODUCT SPOTLIGHT

New VoIP Products & Tools

Avaya IP Wireless Phones

These phones let users tap into the wireless LAN to enjoy the benefits of VoIP without being tethered to a single location. The Avaya 3631, 3641, and 3645 are all standards-based phones that utilize the H.323 protocol.

Features include:
- 802.11b/g radio wireless LAN connectivity
- 802.11e QoS
- 802.11i security
- Rechargeable battery

Best For: Healthcare, retail, and manufacturing employees rarely at their desks and without a fixed location within the enterprise.

(866) 462-8292 | www.avaya.com

Avaya one-X Deskphone 9600 Series IP Telephones

Depending on the model you choose, the Avaya one-X Deskphone 9600 Series line of IP phones offers a range of features, including a large display, status lights and buttons, advanced IP telephony features, and large touchscreens.

Features include:
- Supports multiple adapters for adding functionality
- One-touch access to key functions
- Exceptionally clear audio performance
- Built on open standards

Best For: Nontechnical employees in enterprise, contact center, and branch office settings.

$370 to $840

(866) 462-8292 | www.avaya.com

Avaya one-X Deskphone 1600 Series IP Telephones

Avaya's 1603, 1608, and 1616 IP Telephones all feature a familiar interface and can be deployed in mixed environments or on their own. These phones are high-quality full-duplex speakerphones and support three-, eight-, or 16-line appearance/feature keys and the ability to display up to four lines.

Features include:
- Backlit displays and dual-lamp LEDs
- Support for multiple call appearances
- A two-way speakerphone
- Both softkeys and fixed feature keys

Best For: Basic communications of enterprise, contact center, and branch office users via H.323.

$139 to $355

(866) 462-8292 | www.avaya.com

Cisco MCS 7816-I3 Unified Communications Manager Appliance

The Cisco MCS 7816-I3 server appliance comes with Cisco Unified Communications Manager 7.0 preinstalled, delivering traditional telephony features and advanced capabilities such as mobility, presence, preference, and rich conferencing services.

Features include:
- Up to 30,000 users per cluster
- Centralized configuration and management
- Up to 100 appliances can be combined into a single system

Best For: Enterprises looking for voice, video, data, and mobile applications on fixed and mobile networks.

(866) 556-9087 ext. 4708 | www.cisco.com

Cisco Unified IP Phone 7975G

The Cisco Unified IP Phone 7975G end points support a standards-based (XML) application development environment and feature built-in on-screen user guides, audio and visual alerts, integrated Gigabit Ethernet, and wideband audio for unsurpassed clarity.

Features include:
- Support for iLBC
- Large backlit touchscreen color display
- Gigabit Ethernet connectivity
- Eight programmable keys and five programmable softkeys
- Support for XML applications and double-byte languages

Best For: Offices of executives or major decision makers, administrative assistants, and those working with bandwidth-intensive applications on colocated PCs.

(866) 556-9087 ext. 4708 | www.cisco.com

Cisco Unified IP Phone 7961G

The Cisco Unified IP Phone 7961G is ideally suited for managers that require the enhanced functionality of an IP telephony end point. This model supports both IEEE standard 802.3af inline power and Cisco inline power.

Features include:
- A higher-resolution, graphical 4-bit grayscale display (320 x 222)
- Support for XML applications and double-byte languages
- Gigabit Ethernet connectivity
- Six programmable feature buttons and four interactive softkeys

Best For: Offices of managers and administrative assistants.

(866) 556-9087 ext. 4708 | www.cisco.com

Multi-Tech MultiVOIP Voice/Fax Over IP Gateway

Multi-Tech's MultiVOIP gateway provides toll-free voice and fax communications over an enterprise's intranet or the Internet. This offering supports PSTN-quality voice and fax.

Features include:
- FXS/FXO and E&M connectors on each channel for direct analog connection to phones, key systems, PBX extensions, PSTN lines, or PBX trunks
- Ethernet connectivity
- Connects directly to phones, fax, or PBX
- Utilizes H.323, SIP, and SPP protocols

Best For: SMEs with multiple locations looking to reduce toll charges between frequently called sites.

$299 to $399 (1-port); $899 (2-port); $1,499 (4-port); $2,499 (8-port)

(888) 288-5470 | www.multitech.com

Multi-Tech MultiVOIP FX SIP Gateway

The MultiVOIP FX SIP gateway connects directly to phones, fax machines, communications systems, PSTN lines, or a PBX to provide real-time, quality voice connections to any office on a company's VoIP network.

Features include:
- Ethernet connectivity and full IP compatibility
- FXS/FXO connectors for direct analog connection
- Supports SIP for sending voice over the Internet and SIP supplementary services, including call forward, call transfer, and call hold

Best For: SMEs wanting to maximize the investments already made in data and voice network infrastructure.

$599 (2-port); $999 (4-port); $1,699 (8-port)

(888) 288-5470 | www.multitech.com

PRODUCT SPOTLIGHT

Compiled by Andrew Leibman

NEC Univerge SV8100 Communications Server

Designed to be both versatile and scalable for a company's growing business needs, the Univerge SV8100 Communications Server from NEC supports TDM, IP, video, wired, and wireless standards. The SV8100 offers three onboard applications that can be extended to branches and remote locations.

Features include:
- Converged communications: data, multimedia, and voice over one network
- Enhanced management
- Pure IP with the flexibility to support TDM
- Customizable advanced productivity applications and collaboration tools

Best For: SMEs looking for a robust, feature-rich, and scalable VoIP appliance.

(800) 240-0632 | www.necunifiedsolutions.com

NEC Univerge SV8500 Communications Server

The Univerge SV8500 is built using open standards, letting users leverage existing infrastructure. The offering can even utilize pre-existing centralized or distributed conferencing and trunking equipment for the organization's unified communications needs.

Features include:
- Flexibility through open standards
- New modular chassis and interface
- Extensive voice and IP features
- Complete interoperability with existing NEC systems

Best For: Enterprises looking to set up a pure IP or converged hybrid network.

(800) 240-0632 | www.necunifiedsolutions.com

Nortel IP Phone 1110 Series

The IP Phone 1110 is a single-line, standard-level desktop IP phone that utilizes an integrated IEEE 10/100 switch to connect to Nortel Communication Servers, PC traffic, and a variety of business telephony applications.

Features include:
- Fully backlit monochrome 143- x 32- pixel display with antiglare screen
- Eight fixed keys and four context-sensitive softkeys
- Integrated Ethernet 10/100BaseT switch with LAN and PC autosensing ports
- IEEE 802.3af Power over Ethernet and local AC power options
- PVQM (Proactive Voice Quality Management) for enhanced administration and diagnostics

Best For: Basic communications of enterprise, contact center, and branch office users.

(800) 466-7835 | products.nortel.com

Nortel IP Phone 2000 Series

Nortel's IP Phone 2000 Series desksets are available in standard, intermediate, professional, and advanced models that fit the IP communication needs of enterprises of all sizes and users at all levels.

Features include:
- Single- and multiple-line models available
- Expansion modules offer additional line/features keys
- Integrated 10/100 switch
- Large color touchscreen display (IP Phone 2007 only)

Best For: Users looking for the next-generation features of IP telephony and the carrier-class reliability and ease-of-use of a traditional telephone.

(800) 466-7835 | products.nortel.com

Polycom SoundStation IP 7000

The Polycom SoundStation IP 7000 advanced IP conference phone integrates with Polycom's HDX Video Conferencing Systems and supports Polycom HD Voice technology and integrated Power over Ethernet, and it works with leading SIP-based IP PBX and Softswitch platforms.

Features include:
- Up to 20 feet of 360-degree microphone coverage
- Resists interference from mobile phones
- Optional expansion microphones for greater range
- Connect two units to cover larger conference rooms

Best For: Medium-sized and larger conference rooms that require a system with superior voice quality and clarity.

$1,339

(800) 765-9266 | www.polycom.com

Polycom SoundPoint IP 670

The Polycom SoundPoint IP 670 is a premium SIP desktop phone that utilizes a color display and offers a quality audio, visual, and applications experience for end users and administrators.

Features include:
- A large, vibrant color display
- Polycom HD Voice technology
- Six lines in standalone mode
- Built-in USB port and Gigabit Ethernet switch

Best For: Executives and those needing a high-performance, application-enabled desktop phone with a color display.

$629

(800) 765-9266 | www.polycom.com

Polycom VVX 1500

The Polycom VVX 1500 adds crystal clear video to the host of features and capabilities you expect from a fully featured IP business phone. The offering supports multiple hosted or premise-based call control solutions through the Polycom VIP program.

Features include:
- Color touchscreen interface for voice, video, and applications
- Six-line, feature-rich phone with Polycom HD Voice
- Highly customizable applications platform with open Polycom XML API, integrated microbrowser, and USB 2.0 for applications
- Includes productivity and personalization applications, including Polycom Productivity Suite, Polycom My Info Portal, and Digital Photo Frame

Best For: Executives and line-of-business workers looking for enterprise-grade telephony, one-touch video communications, and integration with key business apps.

$1,099

(800) 765-9266 | www.polycom.com

Toshiba Strata CIX200 IP Business Telephone System

The Strata CIX platform gives users the option to create a pure IP system or a converged communications system as needed. Toshiba's Strata CIX200 supports up to 96 trunks or 160 telephones and combinations up to 192 total.

Features include:
- Multiple Strata CIX systems can be networked together
- Voicemail and auto attendant of four, six, or eight ports
- Advanced voicemail applications can be added to fit your business needs
- Fully upgradeable, protecting your technology investment

Best For: Home offices, startup locations, branch offices, or onsite at customer locales.

(800) 222-5805 | www.telecom.toshiba.com

Toshiba IP 5000 Series Business Telephones

Toshiba's business telephones make built-in advanced features easy for even novice users to access and utilize. Toshiba IP 5000 Series phones include integrated Gigabit Ethernet switches, full-duplex speakers for superior sound, and HTML and Java support with customizable applications.

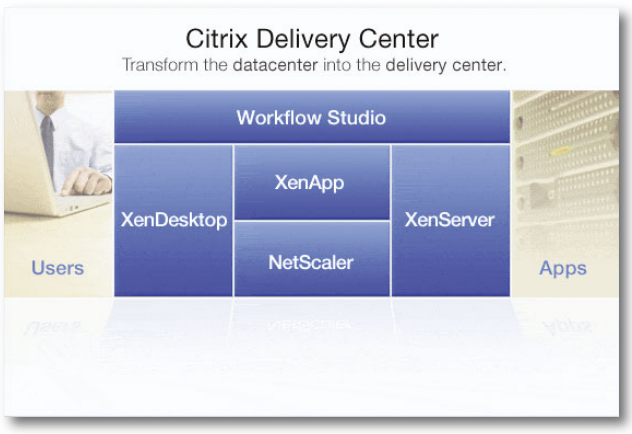
Features include:
- Large, backlit display
- Low-profile design and tilting base
- On-screen user guide
- Multiple programmable buttons

Best For: Home offices, startup locations, branch offices, or onsite at customer locales.

(800) 222-5805 | www.telecom.toshiba.com

PRODUCT SPOTLIGHT

Server Virtualization Tools



Citrix Delivery Center

Citrix Delivery Center is a virtualization tool that converts applications and desktops into on-demand services, so users can work securely from any location.

- Quickly deploy branch offices
- Minimize downtime with business continuity
- Simplify regulatory compliance projects
- Reduce business and IT expenses by operating with greater efficiency

Best For: Data center operations looking to simplify application delivery and desktop management.

(800) 424-8749
www.citrix.com

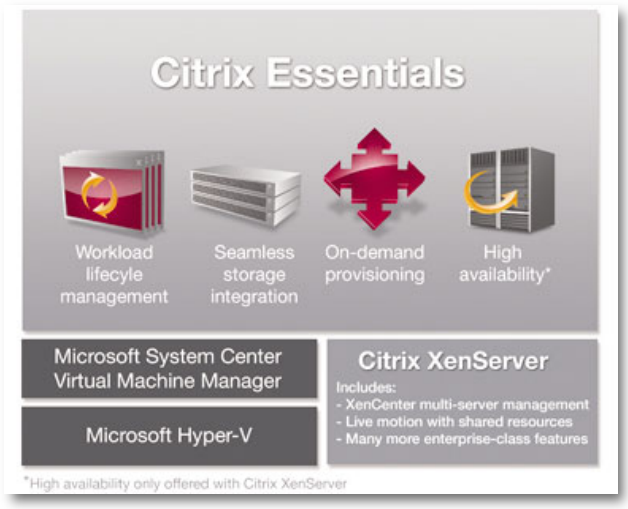
Citrix Essentials For Hyper-V

Citrix Essentials For Hyper-V extends the enterprise management capabilities of Windows Server 2008 Hyper-V and System Center Virtual Machine Manager in the areas of storage management, provisioning services, and lab automation to maximize the benefits of deploying Hyper-V virtual infrastructure.

- Enables customized automation of the key management processes for the Hyper-V virtual infrastructure
- Storage integration via Citrix StorageLink technology
- A single image for simple deployment of workloads to any combination of Hyper-V machines
- Stage management that lets you create customizable workflows and define multimachine configurations

Best For: Advanced server virtualization management capabilities for Hyper-V to help Windows Server 2008 customers create environments for Hyper-V virtual machines.

Price: $1,650 for Enterprise Edition; $3,300 for Platinum Edition
(800) 424-8749
www.citrix.com



Citrix XenServer

Citrix XenServer is an enterprise-class, cloud-proven server virtualization platform that provides live migration and centralized multiserver management. Version 5.5 also offers shared storage support and P2V (physical to virtual) and V2V (virtual to virtual) conversion tools.

- XenMotion lets users manage the virtualized environment while optimizing resources with zero downtime to users
- Shared VM template library
- Virtual infrastructure patch management
- Hot-swappable disks and NICs

Best For: Admins looking to reduce data center costs by transitioning to a dynamic, easy-to-manage IT service delivery center.

Price: Free
(800) 424-8749
www.citrix.com

CITRIX®

Citrix Essentials For XenServer

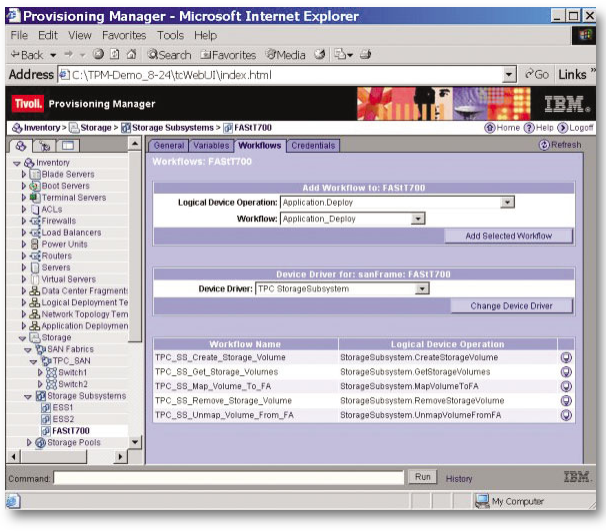
Essentials for XenServer provides advanced server virtualization management capabilities, including application delivery, optimization of computing resources, and rapid provisioning of new resources on demand.

- Citrix StorageLink provides storage management directly to server virtualization environment
- Granular visibility into real-time system performance
- Streamlines the process of building, testing, sharing, and delivering applications on demand
- Self-service setup and tear-down for nonproduction environments typically used in deployment

Best For: IT administrators who must manage virtual environments that need the ability to create highly scalable and responsive virtual infrastructures.

Price: $2,750 for Enterprise Edition; $5,500 for Platinum Edition
(800) 424-8749
www.citrix.com

IBM Tivoli Provisioning Manager



A product that automates best practices for data center provisioning activities to optimize efficiency, accuracy, and service delivery.

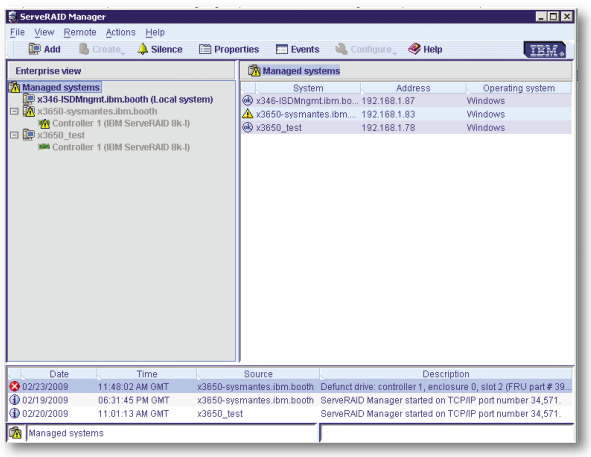
- Discover and track resources to deliver accurate server provisioning and software deployment
- Automatically provision software and certain configurations to Windows, Linux, and Unix servers
- Maintain configurations and manage changes to resources
- Can use a Web Replay plug-in to capture and rerun scenarios for complex tasks

Best For: Workers who perform common data center provisioning in support of change and release management processes.

(800) 746-7426
www.ibm.com

PRODUCT SPOTLIGHT

Compiled by Nathan Lake



IBM Systems Director 6.1

IBM Systems Director 6.1 streamlines the way physical and virtual systems are managed across a multisystem environment. IBM Systems Director provides a single user interface that delivers consistent views for visualizing managed systems, determining how the systems relate to one another, and helping correlate technical resources.

- Uses a modular and extensible platform services foundation for an easy way to add other management capabilities
- Based on industry standards and can report results to other tools
- Integrates IBM's virtualization capabilities to simplify management of physical and virtual resources
- Manages non-IBM x86-based systems through a dedicated agent

Best For: IT administrators who need a platform for managing their virtual servers.

(800) 746-7426
www.ibm.com

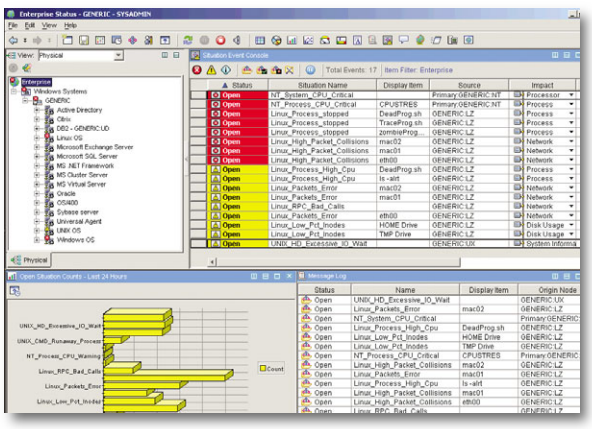
IBM Tivoli Monitoring

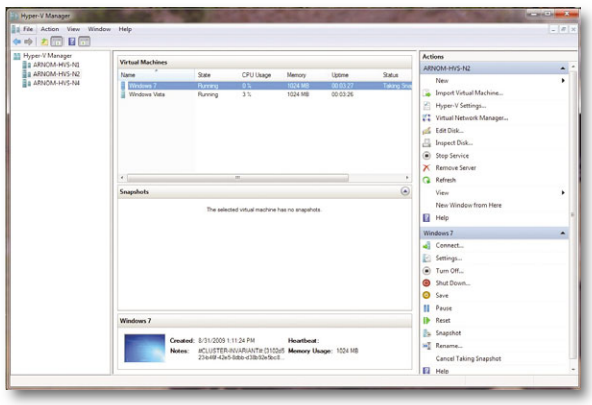
Tivoli Monitoring's flexible browser interface gives you a customizable workspace for system monitoring. It can also detect and help you recover from potential problems in essential system resources.

- Lightweight architecture with support for IBM AIX, Solaris, Windows, Linux, and IBM System z software
- Warehouse and advanced reporting capabilities
- Ensures IT resources and staff operate efficiently and effectively when combined with composite solutions from IBM Tivoli
- Works with Tivoli application, event, network, and service-level management options

Best For: Workers who must remotely manage operating systems, databases, and servers in distributed and host environments.

Price: $78 for 10 Processor Value Unit licenses
(800) 746-7426
www.ibm.com





Microsoft Hyper-V Server 2008 R2

Windows Hyper-V Server 2008 R2 makes it easier for you to utilize virtualization to increase availability for virtualized data centers, improve management, and increase performance for both Hyper-V Virtual Machines and Virtual Networking Performance. Hyper-V lets you consolidate multiple server roles as separate virtual machines running on a single physical machine.

- Live Migration feature for moving a virtual machine between two virtualization host servers
- Hyper-V Management Console to reduce effort for performing regular tasks
- Hardware support for 64 logical processors and SLAT to improve VM performance
- Improved VM networking performance, such as VM Chimney and the use of Jumbo Frames

Best For: People with Windows Server 2008 R2 who want to add the ability to implement server virtualization with ease.

Price: Free
(800) 642-7676
www.microsoft.com

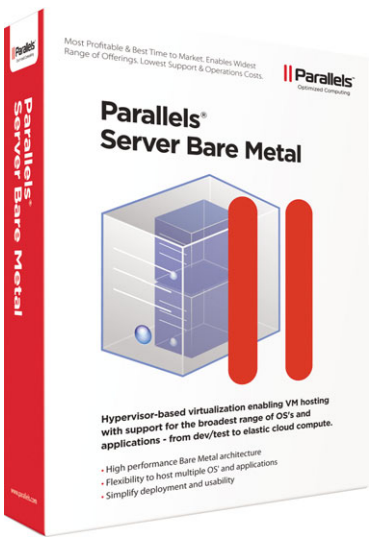
Microsoft System Center Server Virtual Machine Manager R2

A multivendor management tool that helps centralize administration of physical and virtual assets, increase the utilization of servers, and optimize of the virtual IT infrastructure. Management is performed through a single console.

- Functionality to migrate storage for running VMs
- iSCSI target and SAN-based migration across clusters
- Template-based rapid provisioning
- Automates the evacuation of VMs off host machines

Best For: IT staff who want to consolidate physical servers and quickly provision new virtual machines and physical servers.

Price: $869 for Enterprise License; $40 per license per operating system environment or per user with Client License
(800) 642-7676
www.microsoft.com



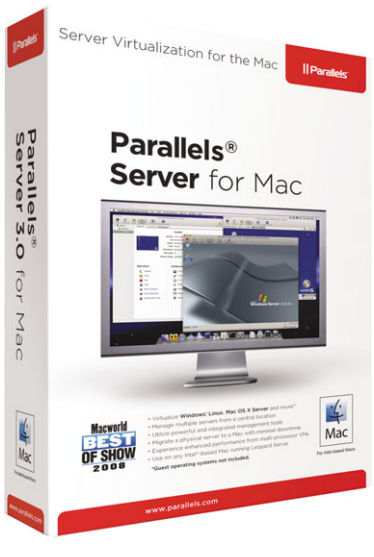
Parallels Server

Parallels Server is a blended solution enabling deployment of both hypervisors and containers on a single physical computer.

- Bare-metal installation requires no primary operating system
- Flexible deployment options of virtual machines or OS containers
- Full and incremental virtual machine and container backups
- Integrated usability tools enable an efficient user experience

Best For: Consolidation projects in the data center, because it provides the flexibility to tailor implementations to end-user or application demands.

Price: Per-server pricing available with volume discounts
(425) 282-6448
www.parallels.com



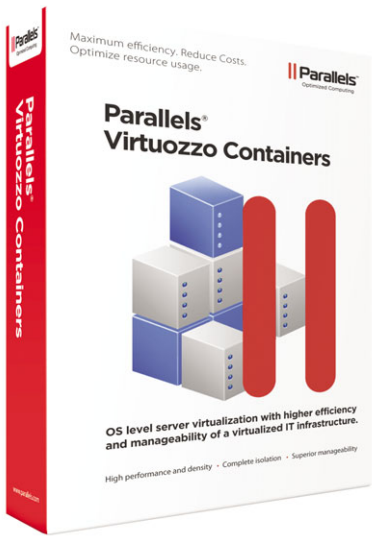
Parallels Server For Mac

Parallels Server for Mac is the first server virtualization solution for the Mac platform. It runs server applications such as Microsoft Exchange, Oracle Database, Microsoft Sharepoint, and more on Apple Xserves.

- Lower software costs through increased flexibility in software options
- Maximize the Xserve's full potential through Intel's VT-X technology
- Effectively address developers' growing needs to develop multiplatform applications
- Ensure business continuity with cross-platform migration and system backups

Best For: Apple Xserve environments that seek to maximize their investments with heterogeneous environment capabilities.

Price: Per-server pricing available with volume discounts
(425) 282-6448
www.parallels.com



Parallels Virtuozzo Containers

Parallels Virtuozzo Containers is an OS virtualization solution for Windows and Linux. Parallels Virtuozzo Containers creates isolated containers on a single physical server and OS instance, offering the highest levels of density, performance, and manageability.

- Run the most virtual environments per physical server
- Decrease OS sprawl while increasing the ability to easily manage virtual servers
- Consolidate performance-sensitive workloads without experiencing issues with native performance

Best For: Organizations seeking to deploy virtual desktop infrastructures or large numbers of on-demand virtual private servers from the least number of physical computers.

Price: Per-server pricing available with volume discounts
(425) 282-6448
www.parallels.com

Go to Page 18

PRODUCT SPOTLIGHT

Continued from Page 17

Server Virtualization Tools

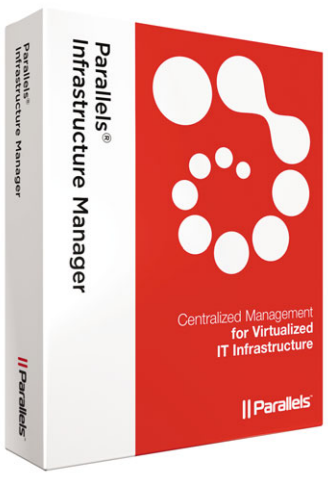
Sun Microsystems Solaris Containers

As an integral part of the Solaris 10 Operating System, Solaris Containers provide server virtualization with low overhead at no cost.

- Provides lightweight, agile, software-defined boundaries to create virtual servers
- Consolidates hundreds of existing enterprise-class workloads onto a single system
- Keeps each environment separate from the underlying hardware
- Makes server consolidation simple, safe, and secure

Best For: Systems and IT administrators.

Price: Free with Solaris 10 OS
(888) 516-9362
www.sun.com



Parallels Infrastructure Manager

Parallels Infrastructure Manager is a Web-based management application for administrators to perform anytime, anywhere management of Parallels virtualized IT infrastructures.

- Manage physical servers and virtualized containers seamlessly from a single management interface
- Create, modify, manage, backup/restore, and delete containers, OSes, and applications
- Use templates to roll out applications to containers on the fly
- Isolate services by running each of them in its own container

Best For: Administrators who need to manage a multitude of Parallels Containers and corresponding servers from any computer with appropriate Internet or network access without loading client software.

Price: Per-server pricing available with volume discounts
(425) 282-6448
www.parallels.com

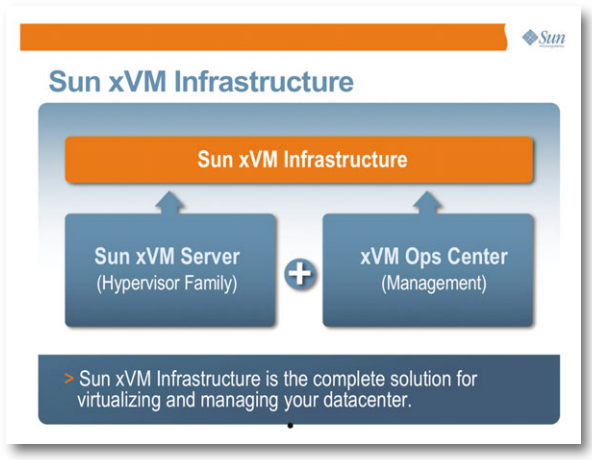
Sun Microsystems xVM Ops Center

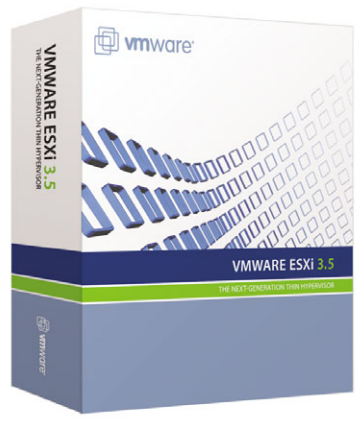
xVM Ops Center lets you manage multiplatform x64 and SPARC systems with the xVM Server hypervisor.

- Generates profiles to ensure compliance
- Discovers and registers data center assets
- Provisions systems
- Manages LDoms and Solaris Containers

Best For: Those wanting a single interface to manage resources and deploy patches and updates across the network.

Price: Licensed on a per-server basis
(888) 516-9362
www.sun.com





VMware ESXi

VMware ESXi is a free way to consolidate your applications onto fewer servers, run multiple operating systems on a single server, and perform backups for disaster recovery.

- Up to 8-way virtual SMP to enable the virtualization of multiprocessor workloads
- Memory overcommitment and deduplication for higher consolidation ratios
- Supports Windows, Linux, Solaris, NetWare, and other OSes
- High availability through NIC teaming and HBA multipathing

Best For: IT staff looking for an affordable, capable hypervisor that partitions a physical server into multiple virtual machines.

Price: Free
(877) 486-9273
www.vmware.com

vmware®

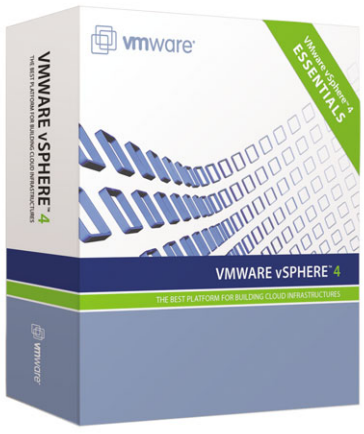
VMware vCenter Server

VMware vCenter Server is a platform for virtualization that lets you centrally manage VMware vSphere environments. It's a scalable and extensive platform that offers a broad partner ecosystem.

- Can access different parts of vSphere Client from vCenter home page
- Inventory search to find virtual machines, hosts, data stores, and networks within vCenter
- Storage maps and reports to view storage usage, connectivity, and configuration
- Performance graphs to monitor virtual machines, resource pools, and server virtualization and availability

Best For: A data center administrator who needs an easier way to manage 100 or more workloads.

Price: $4,995 for Standard version
(877) 486-9273
www.vmware.com



VMware vSphere

VMware vSphere is a cloud OS designed to transform your IT infrastructure into a collection of internal clouds and deliver IT infrastructure as a service.

- Pool virtual resources to best align the infrastructure needs of the business and applications
- Virtualize server, storage, and networking resources
- Increase efficiency through management automation
- Deliver business services on demand and adapt to changing requirements

Best For: Enterprises that need flexible, reliable IT services with complete control over service levels.

(877) 486-9273
www.vmware.com

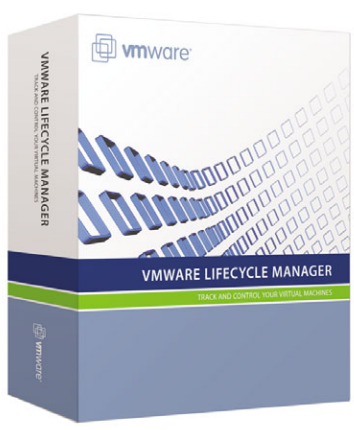
VMware vCenter Lifecycle Manager

vCenter Lifecycle Manager lets you automate provisioning tasks and standardize the way virtual machines are requested, deployed, and decommissioned.

- Service catalog to establish a consistent provisioning process
- Administrative control and visibility to optimize resource utilization for greater ROI
- Establish policies to assign groups of users to specific server, storage, network, and resource pools
- Can import and apply lifecycle management policies to existing virtual environments

Best For: Data center employees who want to ensure consistency within virtual machine configurations and automated workflows of routine tasks.

Price: $895 per license
(877) 486-9273
www.vmware.com



News

Study Reveals Link Between Corporate Data Loss & Poor Economy

Data breaches are undoubtedly a legitimate concern at any time, but the national recession seems to be compounding the problem. According to Proofpoint's report, "Outbound Email and Data Loss Prevention in Today's Enterprise," 42% of those surveyed say that increasing numbers of layoffs in the past year have heightened data risk vulnerabilities.

Keith Crosley, author of the study and Proofpoint's director of market development, says that, when layoffs happen, employees leave the company and occasionally take confidential information with them. "Proof-point's survey found that nearly one in five companies say they investigated a suspected leak or theft of confidential information associated with an employee leaving the company (through voluntary or involuntary termination) in the past 12 months."

Crosley says that the conduits for corporate data exposures now include SMS texts and microblogging services such as Twitter. "Another area that is surprising to most people is that as soon as a new type of messaging channel appears in the enterprise, it becomes both a real and perceived source of risk," Crosley says. "This year, we started asking about short messaging services—that is, SMS (on the cell phone side) and Twitter (on the Web side). Concern about these channels as a potential source of data leakage was about the same as regular IM (about 44% of respondents say they are highly concerned)."

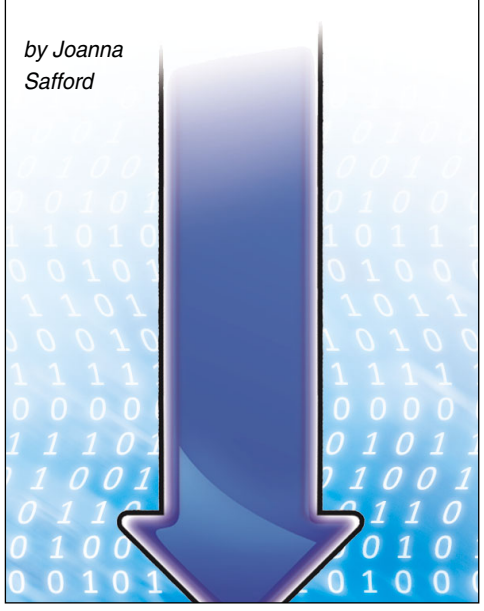
Thorough Email Examinations

In addition to these findings, the Proofpoint survey results reveal that corporate email records are undergoing increasingly thorough examinations because of legal actions related to data loss cases. However, the same companies are inadequately prepared to archive and mitigate sensitive email data. "One of the main takeaways from our survey is that many organizations have no modern email archiving system in place (in our survey sample, adoption for email archiving technology was about 50%) and, as a result, face much higher discovery costs than are necessary," says Crosley.

To minimize enterprise-level data loss risks, Crosley advises companies to formalize acceptable use policies for email and other messaging technologies and be sure to address the latest trends, including social media sites, short messaging services, blogs/message boards, and IM. Moreover, companies must ensure that employees are offered training on security policies.

"Get email under control. Email continues to be the No. 1 risk area in terms of data exposure," Crosley says.

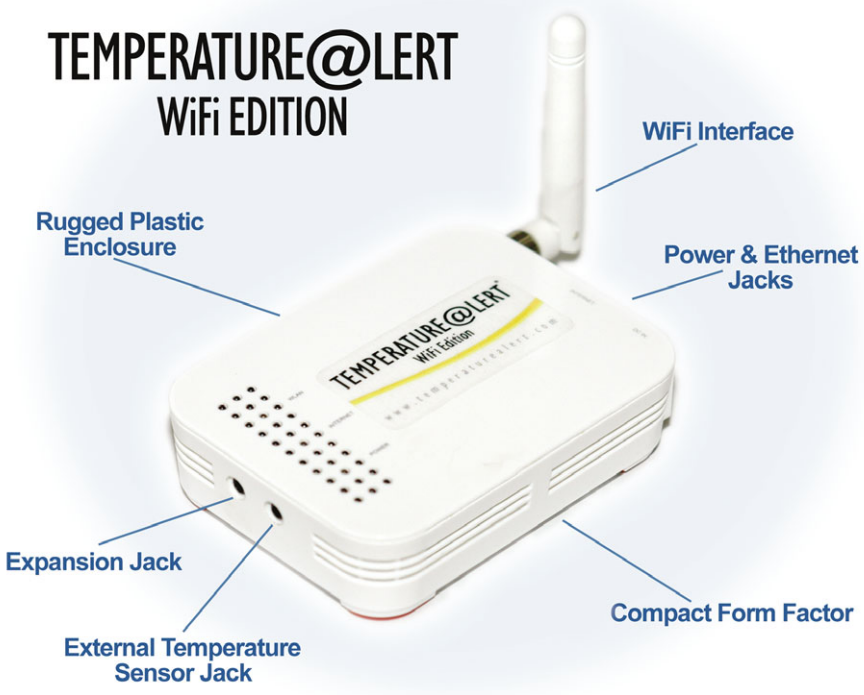
by Joanna Safford



FEATURED PRODUCT

Real-Time Temperature Monitoring

Temperature@lert WiFi Edition Is Like A Wireless Thermometer For Your Data Center



by Holly Dolezalek

• • •

THE OBSESSION WITH TEMPERATURE in the data center is firmly established among those who are responsible for tens or hundreds of thousands of dollars' worth of equipment that, like hothouse flowers, do best in a particular range of temperature.

That's why there are many products out there that allow managers to keep an eye on the temperature in the room where the expensive equipment is housed. There are consoles that monitor many conditions, such as temperature, humidity, airflow, moisture, and smoke. Some even offer the capability of knowing when the door to the data center has been opened and cameras to take a picture of whoever did it. Whatever level of monitoring IT staff want to maintain, there's probably a device for it.

Temperature@lert, a manufacturer of monitoring products in Boston, concentrates on a specific area of environmental monitoring: Rather than offering a console that can monitor everything under the sun, Temperature@lert, quite aptly, focuses on temperature. "Other products have extensive product lineups with a wide array of sensors, and that's fine," says Harry Schechter, president and CEO of Temperature@lert (866/524-3540; www.temperaturealert.com). "We keep it simple because it makes the product more reliable when it's only required to do a few things. Think about Microsoft Word: Most people really only use a few features out of the many that application has. We embrace the ones that people do use."

But that doesn't mean that Temperature@lert offers only a simple temperature sensor and console. On the contrary, the company distinguishes itself by offering different products for different skill levels and needs, while maintaining that simple focus on monitoring one condition—one that happens to be vital to the data center.

Incorporating Wireless

The company's most recent release is the WiFi Edition of its monitoring product. Temperature@lert WiFi Edition is different from other, similar wireless-based temperature monitoring products in that it's based on open-source software. "It's essentially a mini-computer that runs Linux," Schechter says.

It's also a Wi-Fi client that monitors air temperature (between -40 and 200 degrees Fahrenheit) and sends emails to designated recipients if the temperature rises above or sinks below designated setpoints. It does so through a 6-foot external sensor that can connect wirelessly or through an Ethernet cable to the network. The device resembles a wireless router and measures 1 x 2.75 x 3.75 inches in size. The wireless edition connects automatically to any network in range.

Out of the box without customization, the WiFi Edition will email designated users every day with a summary of the indoor weather in the data center, including the high, low, and average temperature for the day. It also has XML and text log file feeds and a zooming feature so that when looking at a whole-day graph—which usually looks like a flat line—users can zoom in on any blips in the temperature to investigate those events easily.

Why Open Source?

For those who are less comfortable with open-source software, the Linux nature of the product might seem daunting. But Schechter thinks the move to open-source software was a smart one, not least because other manufacturers' devices are based on closed systems. "I don't think this could have been done even five years ago, because the right Linux software wasn't available and the hardware wasn't as widespread, either," he says. "We're hoping to upend part of the market this way."

Schechter notes that the integration of Linux makes Temperature@lert a product that can be customized in ways that most temperature monitoring products can't. "The beauty of this is that in order to customize other monitoring products, IT staff have to know C++ or other programming languages and have a specialized compiler for the device," Schechter says. "With our platform, users can load their own software and issue the command to install from Linux. For example, if you use PHP and want to integrate this with your own Web site, you can just install PHP and write the scripts from there."

Schechter notes that, customization aside, the WiFi Edition of the product does well in companies that have small spaces for their data center equipment. "It works nicely anyplace where there are several devices stuffed in a closet that might or might not be big enough for [them], or where the AC isn't as reliable as it could be," he says.

The device is also popular among systems integrators who are maintaining networks for small to midsized enterprises, Schechter says. They love it because they can deploy it en masse, put whatever software they want on it, and then use it as a gateway to other network segments for remote management. "They might need a quick way to integrate remote temperature monitoring into some other system or just want to wire up a dozen of them so that they can compare conditions in different spots," he says.

Schechter worked with one technology company that used the device to compare temperature readings to the output of the AC system. That way, they could analyze the patterns of data from both, and if the peaks and troughs between the two data lines become shallower or more extreme, that might suggest a coolant leak or another type of imminent cooling failure but give the user more time to respond.

"There are a lot of ways to use this device, and open source lets people come up with creative ways to use it," Schechter says. P

Temperature@lert WiFi Edition
(866) 524-3540
www.temperaturealert.com

Description: The WiFi Edition of Temperature@lert allows users to monitor temperature without a PC. Accurate to within plus or minus 0.5 degrees Celsius, the product connects via 802.11b/g wireless to the user's network from a wall adapter. The WiFi Temperature@lert allows users to use graphing and XML to integrate temperature readings with Web sites and other applications.

Interesting Fact: Temperature@lert WiFi Edition features standalone operation, meaning you do not have to leave a computer running in order for it to work.

PRODUCT SPOTLIGHT

A Look At What's Hot In The Power Distribution Market

Cyber Switching Dualcom Series

The Dualcom Series of PDUs from Cyber Switching features an event log that tracks events such as changes in outlet states, logins and logoffs, and the IP address of logins. You can choose to receive event logs through email automatically, and you can add descriptive names to each outlet to help you stay better organized. The outlets display the total system current and overcurrent warnings on the front panel. Additionally, if there is a power outage, the outlet memory will restore the outlet. You can also choose to stagger the start of outlets to protect hardware connected to the unit when the power is restored.

Best For: Enterprises that need remote control over their power distribution to avoid overheating.

- Comprehensive event log with alerts sent via email
- Ability to name each outlet
- Front-panel display of the total system current and overcurrent warning
- Management via Web browser, Telnet, and SNMP

$625
(888) 311-6277 | www.cyberswitching.com

Cyber Switching Dualcom S Series With Temperature & Humidity Monitoring

Cyber Switching's Dualcom S Series PDUs provide outlet-level temperature and humidity monitoring designed to make your data center more environmentally friendly. The unit uses external sensors to monitor changes in the environment and sends an alert once any of the conditions have exceeded the threshold; additionally, a secondary remote sensor lets admins monitor the environmental conditions of a surrounding area up to 30 feet. The Dualcom S Series PDUs offer the ability to monitor each outlet's current, power off each outlet, and schedule each outlet to power on and off at specific times, and the Cyber Breaker feature provides circuit breaker protection by allowing for configuration of unused outlets. The units can be managed through a Web browser, Telnet, or SNMP.

Best For: Organizations looking for an environmentally friendly power plan.

- Serial-enabled
- Secondary remote sensor for expanded monitoring area
- Event logging
- Cyber Breaker feature for circuit breaker protection

$815
(888) 311-6277 | www.cyberswitching.com

Cyber Switching E Series

The E Series offers true RMS current and voltage measurement with a three-digit display that flashes when the current tops 80% of its rating or when a high- or low-voltage condition exists. The E Series PDUs are available in both 20A and 30A models and in 0U vertical or 1U horizontal configurations.

Best For: Companies looking for more control over their current power distribution.

- True RMS voltage measurement
- 8-foot cord
- Available as 20A and 30A models
- Load capacity of 2,400VA

$299
(888) 311-6277 | www.cyberswitching.com

Eaton Advanced Monitored ePDU

Eaton's Advanced Monitored ePDU products give IT managers the ability to monitor, track, and manage power consumption at the receptacle level for all equipment in the data center. The data captured can be used to evaluate energy efficiency and infrastructure capacity. Designed for high-density, mission-critical server applications, the monitored ePDU provides maximum power for both standard and blade servers. Employing multiple configurations, the easy-read digital ammeter, and remote power management with clearly labeled circuits, the ePDU assures easy management and monitoring for current requirements and future expansion.

Best For: Organizations that need to monitor and track the power consumption of high-density, mission-critical server applications.

- High-density configurations reduce enclosure space requirement
- Fuse-less design significantly reduces reset time
- UL Listed (UL 489) branch circuit breakers meet UL60950-1 Edition requirements
- Easy-read digital ammeter reduces local monitoring time (auto scroll capability)
- True RMS ammeter provides accurate power measurement

$1,066 (800) 386-1911 | www.epdu.com

Eaton V55 ePDU

Eaton V55 series high-density ePDU integrates current and temperature monitoring into a 60A vertical strip. This three-phase solution allows for branch circuit monitoring of up to 48 outlets over Ethernet. The configuration options include C13 or C19 outlets and various plug types. Output voltage is 208 volts to provide power supply efficiency. The outlets are connected to six branch circuit breaker sections, with load current monitoring for each section. There is a local LED amp display, and the unit is Ethernet-enabled for Web browser or SNMP monitoring. There is integrated temperature monitoring for two locations with optional probes.

Best For: IT managers looking for a temperature monitoring solution.

- Detachable mounting brackets allow for several mounting options; tool-less mounting hardware is included
- Six 2-pole 20A circuit breakers are located on the front panel
- UL 289 Listed electromagnetic circuit breakers
- Meets branch circuit breaker requirements
- Breaker switch is flush with panel when on to prevent accidental shutoff and shows red when in the off or tripped position

$1,424 (800) 386-1911 | www.epdu.com

Eaton Rack Power Module

The Eaton Rack Power Module simplifies data center power distribution by delivering up to 36kW of power in a 3U cabinet. The module connects directly from a three-phase UPS or other utility source to power secondary power distribution devices. The RPM distributes power to 12 poles with completely customizable input and output configurations and voltages.

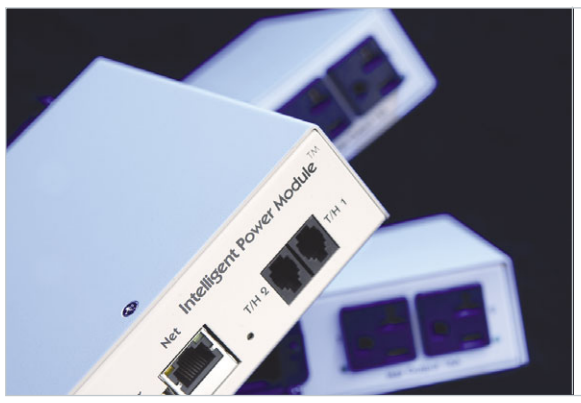
Best For: IT managers who need to closely monitor loads over the network.

- Provides plug-and-play primary distribution of power from a three-phase input source to secondary power distribution devices
- Serves data center loads with various voltages, power cord configurations, and layouts
- Distributes power to 12 poles, grouped into two sets of six poles, with choice of output receptacle types

$2,290 (800) 386-1911 | www.eaton.com/powerquality

PRODUCT SPOTLIGHT

Compiled by Tessa Warner Breneman



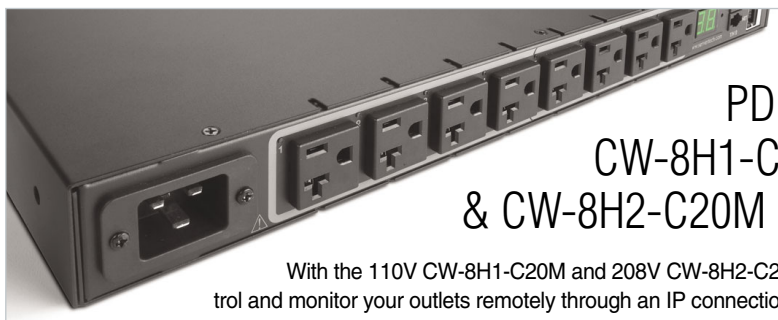
PDUs Direct CW-2H1-C20 & CW-2H2-C20

PDUs Direct's switched standalone PDUs, the 110V CW-2H1-C20 and the 208V CW-2H2-C20, are two-outlet rack-based PDUs that offer remote control and monitoring capabilities serially for out-of-band access or through an IP connection. The remote power management features coupled with the individual receptacles let you power off, power on, or reboot from anywhere through a secure Web interface, SSH, or out-of-band (dial-up) session. These two units are ideal for remote branch offices that house IT and network equipment and Wi-Fi networks that include several pieces of equipment located in different places.

Best For: Small to midsized organizations looking for an inexpensive power solution.

- Individual outlet control
- Environmental monitoring and control
- Industrial-grade outlets
- Steel-cased enclosure

$215 (CW-2H1-C20); $225 (CW-2H2-C20)
(888) 751-7387 | www.pdusdirect.com



PDUs Direct CW-8H1-C20M & CW-8H2-C20M

With the 110V CW-8H1-C20M and 208V CW-8H2-C20M, you can control and monitor your outlets remotely through an IP connection or serially for out-of-band access and enjoy the combination of power distribution and remote management. With the CW-8H1-C20M and CW-8H2-C20M, you'll also get power monitoring and environmental monitoring. The industrial-grade outlets provide multiple in-feed plug types and upgradable firmware for dependable power distribution. The CW-8H1-C20M and CW-8H2-C20M also let users reboot both single and dual power servers with just one command, and when power or environmental conditions surpass the maximum limit, users are warned through SNMP alerts.

Best For: Small to midsized organizations looking for a remotely controlled power unit.

- Individual outlet control
- Environmental monitoring
- Industrial-grade outlets
- Steel-cased enclosure
- Eight NEMA 5-20R outlets or eight IEC C13 outlets

$350 (CW-8H1-C20M); $360 (CW-8H2-C20M)
(888) 751-7387 | www.pdusdirect.com

PDUs Direct C-16V1-C20MX & C-16V2-C20MX

The C-16V1-C20MX and C-16V2-C20MX metered PDUs provide several in-feed plug types and a local amp meter for the 16 NEMA 5-20R or 16 IEC C13 outlets. These PDUs are designed to be mounted in the rear dead space in order to leave more space for equipment and ventilation. These devices also feature local LED input current monitoring, which lets you accurately measure the amps from the connected power circuit, safely maximize the load, and reduce the risk of overloads.

Best For: IT managers who need to save space for equipment and ventilation.

- Industrial-grade outlets
- Steel-cased enclosure
- Premium powder coat
- True RMS reading with input current monitoring

$225 (C-16V1-C20MX); $235 (C-16V2-C20MX)
(888) 751-7387 | www.pdusdirect.com

Raritan Dominion PX Intelligent Rack PDU

The Dominion PX Intelligent Rack PDU is designed to boost power efficiency in your data center and features remote outlet-level monitoring and management, remote power cycling, a user-friendly GUI, and 256-bit AES encryption. With the Dominion PX, you can address emergencies with remote serial and TCP/IP access to outlet-level switching, and you can plan capacity easier with the unit-level and outlet-level power utilization information.

Best For: Organizations needing an efficient power solution.

- Information is shown through an LED display on the devices and remotely via Web browser
- Precise, outlet-level access and control
- Supports advanced authorization options, such as outlet-level permissions and LDAP/S, RADIUS, and Active Directory
- Supports HTTP, HTTPS, IPMI, SMASH-CLP, SSH, Telnet, and SNMP

$649 (800) 724-8090 | www.raritan.com

Tripp Lite PDUMH20ATNET

The PDUMH20ATNET is a 120V 20A metered PDU system with an integrated automatic transfer switch that offers 16 outlets and a digital display to show the total PDU power consumption measured in amps. To guard against inrush-related equipment interaction during startup, the outlets are consecutively powered on at 250ms intervals when the PDU is first booted. Additionally, remote power monitoring and control is provided through an installed Web/network monitoring card, and the PDUMH20ATNET remotely displays the status of input power, load capacity, and outlet power status through a protected network or Web browser interface. Individual outlet control to boot and power down is provided as well as load ramping and shedding for automatic power management.

Best For: IT managers who need to control outlets individually.

- 1U rackmount PDU with digital current monitoring display
- 20A, 120V capacity with 16 NEMA 5-15/20R outlets
- Connects to NEMA 5-20R and locking L5-20R receptacle
- Built-in automatic transfer switch

$879
(773) 869-1111 | www.tripplite.com

Tripp Lite PDUMV20HVNET

The PDUMV20HVNET switched metered rack power distribution unit lets you monitor PDU power consumption and in-rack environmental conditions remotely, as well as power on and off, recycle, or lock out power to the individual receptacles. SNMP or Telnet interfaces provide access to switched PDU systems, and individually switched outlets are managed through the Web/network interface to allow for remote reboots of unresponsive network hardware. Proper operation of interdependent IT systems is guaranteed through user-defined power-up and power-down outlet sequences. This also protects against inrush-related overloads as units are turned on.

Best For: IT managers who need to remotely monitor PDU power consumption and in-rack environmental conditions.

- 208/230/240V, 20A maximum capacity (agency derated to 16A)
- Features C20 power inlet, detachable L6-20P input cord, and 24 controllable outlets (20 C13 and four C19)
- Protocols supported include HTTP, HTTPS, PowerAlert Network Management System, SMTP, SNMPv1, SNMPv2, Telnet, FTP, DHCP, BOOTP, and NTP

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FEATURED COMPANY

Keep Your Disks In Check

Diskeeper's Defragmentation Products Help Make The Most Out Of Storage Space

by Robyn Weisman

• • •

BURBANK, CALIF.,-BASED DISKEEPER was first established in 1981, before most of the current generation of IT professionals began their careers. Its founder and CEO Craig Jensen started his career as a software engineer back in the 1960s and started Diskeeper to solve some of the problems he had seen working with mainframe systems.

Then Jensen came upon a problem that plagued mainframe systems using Open DMS platforms. "Back in the '80s you had mainframes [and] dumb terminals, and everything was kept on the mainframes. And mainframes had problems about how [they] stored data," says Michael Materie, director of product management at Diskeeper (www.diskeeper.com).

Jensen figured out that by defragmenting the data on tape drives, data access became much faster, and he designed the now venerable Diskeeper, a software utility that automatically defragments disks without having to take systems offline while doing so. Diskeeper was such an immediate success that Jensen changed the name of the company from Executive Software to Diskeeper in 1986. Diskeeper the company has sold more than 35 million copies of its namesake software to date.

Innovative & Reliable

Diskeeper evolved from defragmenting Open DMS systems to Windows systems. According to Materie, Windows platforms have been Diskeeper's concentration since the mid-1990s. "Back in 1994, while Microsoft was making the push to make Windows a corporate platform and was building the NT platform, we built some kernel-level code with those guys to allow defragmentation to work online within Windows itself," Materie says. "We started our partnership at this time and ported Diskeeper to the Windows platform."

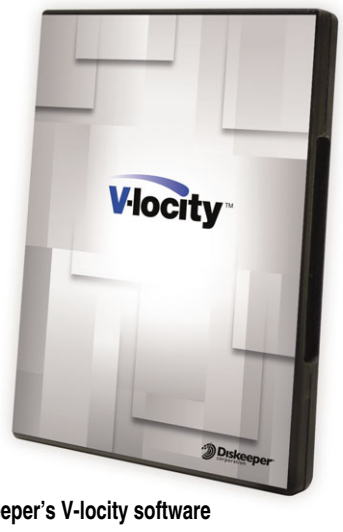
And Diskeeper continues to evolve, which is a primary reason why the company has thrived since the dawn of the PC age. Diskeeper started by concentrating on disk performance and expanded its focus to storage performance and file system performance and the way these translate into overall system performance, Materie explains, adding that new technologies are continually being incorporated into Diskeeper software to optimize systems of all types.

For example, HyperBoot is a new driver-based solution that improves bootup speeds for Windows XP and Windows 7 by about 25%. "We've done a good investigation of what happens during the boot process and optimized it. As you add applications, your system slows down. We were looking to maintain out-of-the-box performance," says Materie, who adds that Diskeeper is targeting major laptop and netbook providers so that the HyperBoot technology is incorporated from the get-go.

"The tagline of our company is 'Innovators in Performance and Reliability Technologies,' and that's really what we focus on—innovating technologies that really enhance and maximize performance and reliability of systems," Materie says. "HyperBoot and Diskeeper innovations just in these products alone are really key to the company."

The V-locity Revolution

Few would disagree that data centers have changed pretty dramatically in the past four or five years. Materie points out that, in the past, every server was a single box with its own set of disks using one operating system. Relatively few SMEs ran true 24/7 environments, and so scheduling defragmentation at 11 p.m. was not a big deal.



Diskeeper's V-locity software defragments virtual machines.

Today, virtualization has become almost ubiquitous, as SME data centers increasingly must administer exponentially larger data and application loads. "You have shared disks and shared storage across either multiple servers connected into a SAN, multiple virtual machines (VMs) on a server, or multiple VMs on a server connected into a SAN," says Materie. "A lot more stress is put on the disks, which means fragmentation actually becomes much more of an issue. With these new environments, defragmentation that worked four or five years ago doesn't apply anymore."

Given that a data center may have 10 VMs in one physical box, scheduling defragmentation becomes more problematic. "You'd have to stagger these schedules so that they don't bump into one another [and] don't defrag while the system is in use and people need to access the storage," says Materie.

Diskeeper has responded to this migration toward virtualization by developing V-locity, a new solution targeted toward these virtual environments. V-locity is a virtual-specific application that performs the same sort of defragmenting and other functions on Hyper-V virtual machines that Diskeeper handles on physical ones.

"V-locity has a smart agent that sits at the host platform and communicates with an agent that is installed in each of the guest virtual machines," Materie explains. "They're able to coordinate when resources are available so that they never bump into another machine doing defragmentation or a user just doing productive work within one of those operating systems."

Fixing A Problem That Is Always There

Materie says that Diskeeper software fixes fragmentation, a problem that is always present no matter what type of environment you have running. Some of the ramifications of having fragmentation are slow performance, lower productivity, and increased help desk traffic. "Defragmentation is one of the top 10 things to do when somebody calls in to complain that something is wrong with [his or her] system," Materie says.

Oftentimes, IT makes the mistake of throwing more hardware, such as more hard drives or SAN equipment, at what is basically a software problem. "IT departments find themselves caught up in much more expensive Band-Aid solutions rather than fixing the cure. For the price of a hard drive, you get the price of the [Diskeeper] software," Materie says.

And the latest release of Diskeeper, Diskeeper 2009, includes a new technology that prevents up to 85% of disk fragmentation from occurring in the first place. "It's a proactive solution. In other words, you don't have to defrag after the fact," Materie says.

In addition to Diskeeper 2009 and V-locity, Diskeeper has also released a solution called HyperFast that optimizes SSDs (solid-state drives), which are increasingly being used in laptops and netbooks. "SSDs are not good at sequential write performance, and the reason for that is if you have free-space fragmentation on the drive, it will chop a file up across free spaces that are within the SSD and cause performance drops within the drive and slower write performance," Materie explains.

HyperFast works both by automatically eliminating free-space fragmentation and by reducing the aggregate erase-write cycles that an SSD would experience during normal usage. Not only does this lead to faster performance, it dramatically increases the lifespan of the SSD.

The variety of defragmentation products that Diskeeper provides is a boon for the company itself as well as its users. "It's great because if defragmentation was just a single spinning disk attached to the computer, we probably would have gotten bored a long time ago," Materie says. P

Diskeeper
(800) 829-6468
www.diskeeper.com

Diskeeper specializes in software that remedies the disk fragmentation that can cost data centers valuable storage space.

In addition to traditional hard drives, the company offers defrag software for virtual machines and solid-state drives. "The tagline of our company is 'Innovators in Performance and Reliability Technologies,' and that's really what we focus on—innovating technologies that really enhance and maximize performance and reliability of systems," says Michael Materie, director of product management at Diskeeper.

Diskeeper Products

Product	Description
Diskeeper 2009	Venerable defragmentation utility, now with enterprise features, such as Terabyte Volume Engine technology and I-FAAST 2.0 (Intelligent File Access Acceleration Sequencing Technology). Reengineered InvisiTasking technology consolidates files while preventing background processes from hampering applications and OS use of computer resources.
V-locity Virtual Platform Disk Optimizer	Next-generation defragmentation utility consolidates free space and eliminates disk I/O bottlenecks in virtual hard drives using Windows Server 2008 Hyper-V deployments.
HyperFast SSD Optimizer	First-ever optimizer formulated specifically to defragment and improve performance of SSDs (solid-state drives) used in netbooks.
Undelete 2009	Provides real-time recovery and immediate restoration of accidentally deleted and overwritten files with SearchDisk capabilities and Emergency Undelete, which recovers files deleted before installing Undelete 2009.

FEATURE PACKAGE

Top Trends & Technologies To Watch

Get up to speed with our quick guides to the top upcoming data center technologies and trends in four key areas: VoIP, data center building, IT automation, and mobile security.

Top VoIP Technologies & Trends | 23

■ After more than a decade as the Next Big Thing in IT, Voice over IP is finally starting to realize its long-held promise as a cost-effective enabler of agile business.

What's New In Data Center Building | 24

■ Like technology itself, data centers are constantly evolving, with new products and strategies emerging that are designed to increase efficiency and lower costs. Here are some top facility trends worth watching.

Advancements In IT Automation | 24

■ Given the financial restrictions on the data center budget, hiring more staff to address the mounting work load is no longer an option. That's why more IT departments are turning to commercial IT automation software in order to increase operations efficiency.

Security On The Go | 26

■ As functions that were once chained to the desktop become available in mobile devices, the demand for that functionality tends to become irresistible. But as IT managers know, the problem with new functions is that they're usually accompanied by a threat to security.

Top VoIP Technologies & Trends

Quality & Functionality Are On The Rise

by Carmi Levy

• • •

After more than a decade as the Next Big Thing in IT, Voice over IP is finally starting to realize its long-held promise as a cost-effective enabler of agile business. Ever cheaper and wider bandwidth, more tightly integrated applications, and rapidly improving quality of service are quickly addressing the obstacles that have kept some organizations from jumping in.

"This is the beginning of a wave of expanded functionality for voice communications," says Mike Oeth, CEO of Junction Networks (www.junctionnetworks.com). "Once you have voice traveling along the same network as IM, presence, and email, you have all kinds of opportunities to mash them together to make them more powerful than any one technology is by itself. This will have a tremendous impact on business communications."

Key Points

- High-definition voice's greater sound quality makes it easier to be heard and understood—a critical factor in today's globalized economy.
- By breaking down barriers between traditional landline and cell phones through fixed mobile convergence, companies hold the line on costs through simplified infrastructure and reduced mobile voice and data usage.
- Open standards allow quick and cost-effective implementation of customized features, which helps smaller organizations level the playing field.

Quality Finally Takes Center Stage

High-definition voice—often called HD Voice or HD VoIP—uses higher sampling rates and more robust network bandwidth to deliver significantly greater call quality.

"You have to experience HD Voice quality to appreciate it," says Oeth. "It makes it so much easier to stay focused during long calls and easier to understand and be understood when someone is not using his native language, as is so often true in today's business world."

Convergence, long considered a holy grail of improved communication tools and processes, is finally becoming a mainstream reality thanks to a move to open standards and platforms. Earlier-generation VoIP solutions, often based on proprietary, vendor-specific technologies, are rapidly being replaced by more interoperable solutions.

"It would be unthinkable to have to buy your servers, your network switches, your desktop machines, laptops, and peripherals from the same vendor, and the same principle applies to VoIP systems," says Lauren Morris, channel manager with ipcortex (www.ipcortex.co.uk). "By opting for an open system, users don't have to subscribe to the tyrannical lock-in and high expense associated with proprietary solutions. They can choose elements of the system that best suit their needs, be it a smaller budget, higher functionality, or other specific requirements."

The Back End Gets Stronger

Improvement is happening behind the scenes, too, as simplified infrastructure allows smaller organizations and home office-based workers to take advantage of capabilities formerly limited to larger offices. SIP trunks, for example, allow direct communication with VoIP end points and elimination of interfaces and related equipment along the way. Richard Bishop, sales engineer with Black Box Network Services (www.blackbox.com), says this lets smaller players act bigger.

"With SIP, advanced calling features can be available to single end points without a traditional phone system sitting in between," says Bishop. "SIP trunks will eventually replace traditional phone lines at a lower cost and more feature offerings."

Software: The Great Differentiator

Although its name suggests voice, the real advantage to VoIP lies on the application side. Bob Paulsen, president and CEO of Unity Business Networks (www.unitybn.com), says extended capabilities are already giving his company a competitive edge.

"VoIP has become increasingly flexible for businesses that want to customize it for their specific needs," says Paulsen. "For instance, we have a client, a travel agency, with 30 call-center groups. The client wanted to be able to see the activity of every call center on one screen and access it anywhere. We built that screen for him the next day. We are blending voice and data, providing more information that is customized for end users."

Software-driven innovation extends beyond the firewall, too, according to Brent Thomson, CEO and programmer/developer of Jive Communications (www.getjive.com).

"Cloud computing mixed with software telephone switching makes for some really exciting possibilities," says Thomson. "Any time you connect a computer to an otherwise mundane part of a business, things get interesting."

The proliferation of VoIP providers and the widespread acceptance of Flash for dynamic online applications could make tomorrow's VoIP look like a simple Web app.

"The ability to move away from dedicated hardware and into Web applications for VoIP services is starting to show in many areas," says Dave Beering, managing director at MorganFranklin (www.morgan-franklin.com), a business and technology solutions provider. "This is attractive to the enterprise as well as developers/startups. Seamless integration into enterprise applications should increase productivity, and from a startup perspective, there is ability to recognize revenue almost immediately because development time is so short."

Eliminating Barriers

Fixed mobile convergence, or FMC, has emerged as a key enabler of today's increasingly distributed mobile workforce. FMC breaks down barriers between traditional landline-based phones and mobile devices, allowing users to use one handset—a smartphone—for all calls. In the office, the technology allows a smartphone user to leverage the Wi-Fi network. Calls are automatically handed off to traditional cell-based networks as soon as the user exits WLAN coverage. As organizations look to squeeze more productivity out of their most important asset—their staff—flexibly deployed telephony shifts from luxury to necessity.

Jon Nelson, product marketing manager with Toshiba Telecom (www.telecom.toshiba.com), says the growing needs of today's remote workforce lie at the root of this change. He says a number of technologies are critical to improving business productivity, including wireless SIP phones that work via the WLAN; softphones that enable mobile workers while out of the office; IP telephones that support remote workers; and easy in-office moves, adds, and changes. Delivering sophisticated services all the way to the home office—a growing factor in virtually all sectors—allows companies to deploy remote call center agents to more closely adjust resourcing to meet fluctuating demands. It's a capability that has universal advantages.

"All sectors can benefit," says Nelson. "Any company or public agency who wants to gain productivity can use VoIP to network its locations, deploy remote IP telephones for remote workers or call center agents that are networked to the main telephone system, or use soft IP phones or wireless handsets for mobile workers."

Most Promising Trend: Outsourcing

Accelerating change in VoIP capabilities makes it increasingly difficult for any company to keep pace. Buying outside services often makes more sense than building your own.

"For large organizations, these changes are often not a problem, but for small and medium-sized organizations, it can cause them to rethink or even delay their transition to VoIP," says Steve Wong, VP of marketing at ClearSight Networks (www.clearsightnet.com), who adds that vendors can deliver big company VoIP capabilities to small and midsized organizations for a fraction of the cost. Wong says this segment of the market is growing faster than the VoIP market as a whole.

FEATURE PACKAGE

What's New In Data Center Building

The Top Technologies & Trends For Today's (& Tomorrow's) Data Centers

by Elizabeth Millard

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LIKE TECHNOLOGY ITSELF, data centers are constantly evolving, with new products and strategies emerging that are designed to increase efficiency and lower costs. Here are some top facility trends worth watching.

Airflow Management

There are basic airflow management best practices that can augment the use of facility materials, notes Michael Hogan, global offering manager of site and facilities services at IBM.

According to Hogan, there are several steps an enterprise can take that are easy to implement and relatively low-cost, such as strategically placing perforated tiles and baffles, sealing up holes in the raised floor, and implementing hot aisle/cold aisle layouts for servers. He adds that he's seen clients with typical 25,000-square-foot data centers save as much as 6% annually on the energy costs for their facilities and says such clients can reach payback in as little as seven months.

With airflow such an important issue, it's likely that more focus will be put on research and development of products that allow for greater airflow without impacting a data center's overall footprint.

LED Lighting

Although much attention is paid to cooling technologies, lighting is part of a data center's overall energy usage bill, and many data centers are opting for a green IT move toward low-energy LED-based units, notes Ben Stewart, senior vice president of facilities engineering at Terremark (www.terremark.com).

LED lighting uses only about one-tenth the energy of comparable traditional lighting and lasts nearly 25 times longer. The lighting tends to pay for itself quickly through energy cost savings, but the technology can also be a boon for getting local tax credits or rebates from utility companies. As more utilities try to limit consumption, it's likely that rebate programs will be augmented, so watch for lighting to become a bigger data center issue than in the past.

Water Technologies

Increasingly, water consumption is becoming a hot topic, particularly in areas such as California where water bans have been put in place. Because high-density servers require more cooling, and that temperature adjustment can come from water-based cooling, look for reduction strategies to take a more central role in the next few years.

For organizations such as those in health, education, and government that rely on cloud computing server farms, the efficient use of cooling towers will become more significant. Using recycled water is already a strategy in play at some companies, and for new construction, it's likely that data centers will be placed closer to water sources such as rivers and lakes.

"There is a fine line between energy efficiency and total water use," says Rick Cockrell, CTO at Core4 Systems (www.core4sys.com), a data center cooling vendor that provides CRAC and AHU (air handling unit) systems. "We need to look at both to address sustainability."

Most Promising Trend: Smaller Centers

Much as the move from huge mainframes to smaller servers shrunk the physical footprint of data centers, the shifts toward virtualization, offsite storage, tiered storage, and thin provisioning are causing data centers to get even smaller and more efficient.

"Establish a comprehensive virtualization strategy that combines server and storage virtualization to help consolidate physical hardware and dramatically reduce your carbon footprint and energy consumption," notes Bob Fine, director of product marketing at Compellent Technologies (www.compellent.com).

Not only will energy use be reduced through such strategies, but it's likely that data center buildings won't need to be expanded to allow for enterprise growth.

FEATURE PACKAGE

Automation Advancements

Implementing Automation Lets You Put Some Of Your Tedious Tasks On Autopilot

by Sandra Kay Miller

• • •

ALTHOUGH COMPUTER SYSTEMS have driven business into the 21st century, there are still plenty of monotonous, repetitive tasks in the data center that can make an IT administrator feel as if she is sitting at a 19th century manufacturing machine pumping out widgets.

According to Joe Kosco, COO of Network Automation (www.networkautomation.com), the issue data centers are confronting, especially in this tough economy, is that they now have fewer resources but still have to support just as many machines and users and an expanding array of applications. Additionally, the demands are greater in terms of having real-time data with virtually no downtime. "The demands on the IT department are increasing in terms of time and expectations, while the resources they have available to deploy against increasing demands are shrinking. IT is in a real bind and must do things much more efficiently," says Kosco.

Given the financial restrictions on the data center budget, hiring more staff to address the mounting workload is no longer an option. IT departments can no longer afford to bring new staff up to speed or hire developers to write customized scripts. Increasingly, Kosco sees more organizations turning to commercial IT automation software in order to increase the efficiency of their data center operations.

Although customized scripting and coding will continue to fill many needs in the data center, automation software delivers the convenience of easy-to-use solutions with familiar capabilities such as drop-down menus, radio buttons, drag-and-drop, directory trees, and fill-in-the-blanks without the arduous tasks of learning new and complex programming languages. So where does automation fit into your enterprise?

What Can You Automate?

Various organizations—health care, finance, manufacturing, and supply chain, for example—have different kinds of data spread across multiple systems and platforms that must be integrated, monitored and disseminated, and stored and secured, often in real-time. The two most prevalent areas of IT automation today are monitoring and data movement.

"Data centers are automating everything that is automatable—things that are repetitive in nature and that are predictable. They are thinking about processes where people are doing repetitive things that are chewing up a lot of time," says Kosco.

Mihir Shukla, CEO of Automation Anywhere (www.automationanywhere.com), sees three distinct areas of IT automation emerging: virtualized environments, the front end of applications, and event-driven deployments.

As data centers integrate virtualization to reduce the cost of hardware acquisition, cooling, and space constraints, the intricacy of the IT environment drastically increases. "The complexity of management and security has increased, and we see automation software specifically designed

Most Promising Technology: Self-Healing Systems

One area in which data centers can greatly benefit is event-driven automation, also referred to as "self-healing" systems. Mihir Shukla, CEO of Automation Anywhere (www.automationanywhere.com), believes many of the problems that regularly occur in the data center can be prevented in the first place. "We are seeing automation being placed in the environment and watching for certain events to occur in the system. It's not just preventing the problem but taking corrective action, as well. Event-driven automation on a self-healing system is the beginning of a large market as a whole, and we are seeing a significant demand for it," says Shukla.

Automation experts are finding that many problems that regularly occur in the data center can often be prevented by event-driven automated solutions. For example, servers that reach a predefined threshold for CPU can be instantly offloaded onto available systems. Similarly, when drive space reaches a maximum, files can be either automatically archived or redirected elsewhere.

Key Points

- IT automation can help data centers to remain competitive in an era of being tasked with doing more and having fewer resources.
- There are many areas in which data centers can benefit from automation, including virtualized environments, applications, and management.
- More automation solutions are being developed for commercial enterprise systems, making it easier for data centers to implement them.

Containerized Power & Cooling

Systems that bring together UPS, switch-gear, standby generators, and chiller systems are common in today's data centers. But according to a recent white paper from Active Power (www.activepower.com), what's new is sustainable and highly efficient containerized power and cooling systems.

The challenge for power systems up until now has been the chemical batteries, which suffer when the systems are deployed outside, a usual tactic. An integrated flywheel UPS system, on the other hand, doesn't show degradation because it can operate in a wide temperature range.

There are reliability improvements, efficiency, and financial gains to be had in an integrated continuous power system, the white paper notes. By switching to a flywheel UPS system that's electrically coupled with a standby generator and uses standard switch-gear, a data center can manage and optimize IT loads in smaller and isolated blocks, leading to significant savings.

This is the type of strategy and technology mix that's worth watching for tomorrow's data centers, particularly as energy costs rise.

Sensitive Sensors

One technology that's come a long way in the past decade is data center sensors, which once just measured a room's temperature and humidity levels but can now track heat generation, power consumption, and cooling effectiveness. These sensors also integrate with other systems, such as sprinklers, motion sensors, and smoke detectors, and can also remotely reboot and control power to servers and network devices.

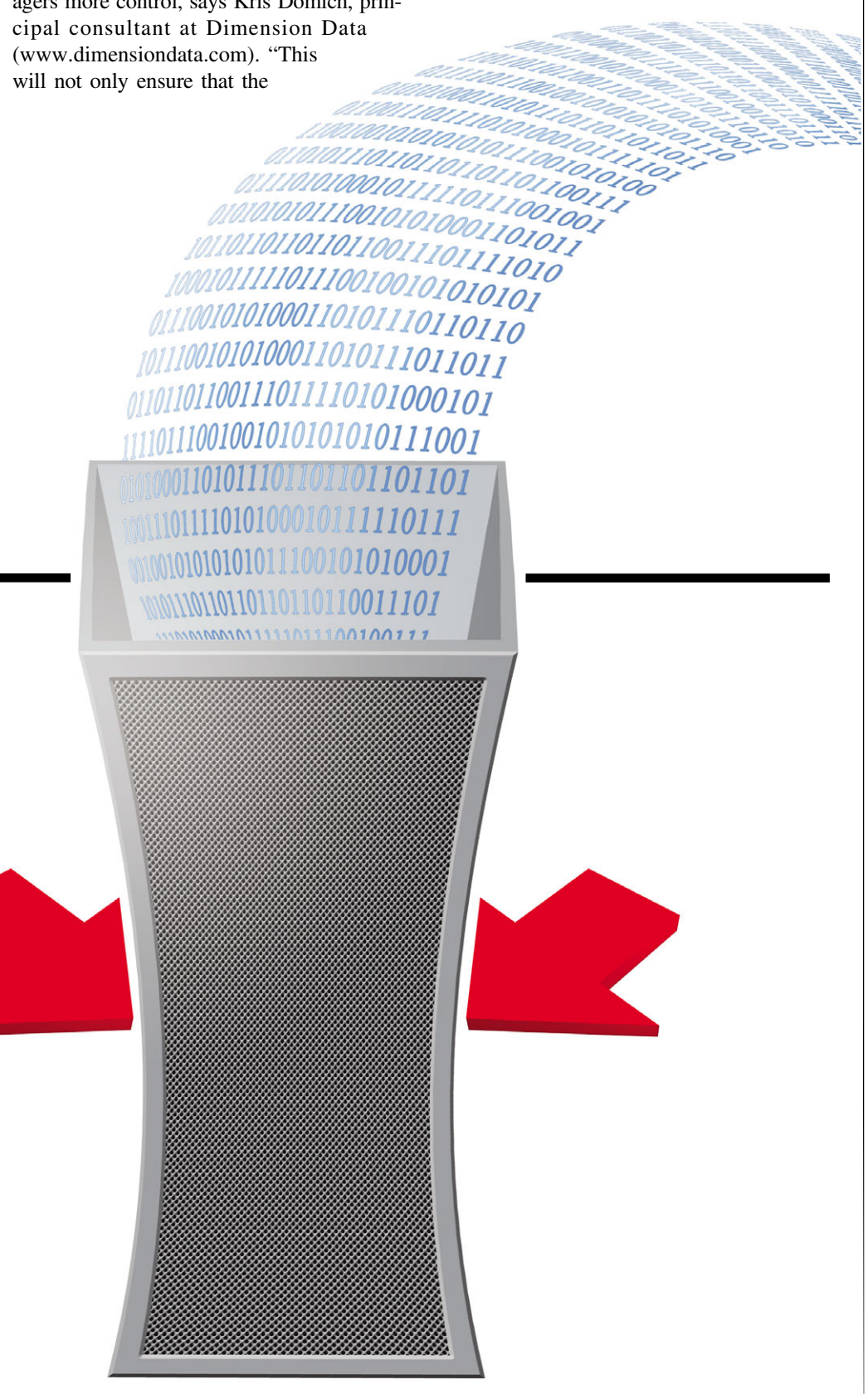
Because the sensors are so integral to protecting a data center's space and equipment, it's likely that manufacturers will keep building in functionality that boosts intelligent power management. Also watch for smaller sensors that can be positioned throughout the data center to track temperature and humidity around each rack of servers, and which work together to produce reports.

For example, in February, Microsoft deployed a wireless sensor network that includes small, battery-powered devices that report back to a back-end system. The sensors function similarly to RFID tags, creating a mesh network that transmits information from one sensor to the next until a base station is reached.

Using any type of sensors will help prevent outages and give data center managers more control, says Kris Domich, principal consultant at Dimension Data (www.dimensiondata.com). "This will not only ensure that the right amount of cooling and power is being delivered to where it's needed, but it will also ensure it's not being delivered where it's not needed, thereby reducing the amount of wasted energy." P

Key Points

- The top trends in data center building and facilities management are toward increasing efficiency without breaking budgets.
- Look for shifts in lighting, cooling, water usage, and building materials as data centers strive to go green and save some green at the same time.
- Smaller centers are also on the horizon as consolidation technologies such as virtualization gain in popularity.



for virtualized environments being rapidly adopted," says Shukla.

Shukla also points to the application layer as being ripe for automation. "If you look at a typical application, it has three tiers—database, user interface, and business logic. Typically, automation has occurred at the back end, particularly the database, but increasingly the front end is also being automated, such as mimicking the user behavior," Shukla explains.

The Transition

In order for an IT organization to effectively implement automation into their data center, Kosco advises, "It's more of a mindset of knowing there are inefficiencies. They need to identify the inefficiencies and streamline processes that are costly and error-prone."

He sees two distinct types of automation deployments within organizations: generalized and specialized.

"There are companies that say, 'We have a general problem and we need to do more with less, so where can IT automation software have the biggest bang for our buck?' and they start looking in those areas," says Kosco. However, the majority of organizations turn to IT automation to address specific problems.

"It will start shifting in the next few years to organizations who have IT departments who are pulling out their hair because they have so much work to do and not enough time or resources. In order to get out of the IT firefighting mode, many IT departments are going to be turning to automation software," says Kosco. Currently, he sees too many IT departments so busy being reactionary that they don't even have time to implement automation measures. "That's a situation that due to competitive issues will have to change."

Looking Ahead

From Kosco's point of view, he has been seeing more adoption of IT automation in the midmarket compared to what has happened in the high-end market. "More and more of these midmarket companies are wanting solutions that can assist them with their specific problems. They don't have the resources but still have similar issues that need to be tackled."

He predicts that over the next few years, more midlevel companies will be turning to IT automation solutions because of the development of direct connectors allowing them to automate their specific applications, such as Active Directory, SAP, and Oracle applications. "They need to be able to automate their business processes without writing specific code," says Kosco.

Shukla expects to see much more IT automation over the next few years, including automating IT management. "Numbers can speak for themselves. IT automation can sufficiently impact the bottom line," he says. P

News

New Security Alliance To Battle Malware

In an effort to better collectively fight malware, dozens of security-related companies have banded to form the Industry Connections Security Group. Formed by McAfee, Symantec, Trend Micro, Microsoft, Sophos, and AVG Technologies, the group will fall under the IEEE Standards Group. In a blog post, Mark Harris, vice president of SophosLabs, wrote that, despite the security industry having a history of sharing samples among each other, "often these sharing arrangements are still based on individual relationships rather than formal agreements." The IEEE Standards Association says that up to now, "this co-operation has not been standardized or documented in a format that lends itself to systematic improvement in operational efficiency or visibility and review by people outside the vertical industries." Although the new security group currently has only one working group that is addressing malware, other working groups are expected in the future.

Smartphone Shipments Defy Economy

Worldwide smartphone shipments rose 13.4% year-over-year during the second quarter, with Apple in particular showing huge gains as iPhone sales skyrocketed 626.9% in the past year, according to a recent survey from Canalys. Although RIM

holds a 52% share of the North American smartphone market (down from 56.4% in the second quarter of 2008) and saw BlackBerry shipments increase about 29% for the quarter, Apple now holds a 23.3% share of the North American market, up from 7% a year ago, based on 2.6 million iPhones shipped. That's about a 365.4% increase in shipments compared to a year ago. HTC, meanwhile, saw its North American market share fall from 8% to 5.6%. Worldwide, Nokia maintained its market dominance, claiming a 44.3% global share over RIM, which increased its global share to about 21% from 16.7%. Apple's worldwide share, however, increased about 627% from Q2 2008's 2.1% share to 13.7% for the second quarter of this year.

Verizon Completes 4G Wireless Tests

Verizon Wireless announced that it completed early testing in Boston and Seattle of its 4G wireless service. Verizon used the 700MHz spectrum it bought from the FCC to deliver the 4G speeds. Based on LTE (Long Term Evolution) technology, Verizon forecasts the 4G service will be 15 to 100 times faster than other wireless networks. The company says it plans to start offering the service commercially in 2010 and provide service for up to 100 million people in 30 markets. By 2013, Verizon plans to have nationwide 4G coverage

News

Broadband Deployment Gaining In Rural Areas

Broadband deployment in rural areas has been growing at an increasing rate, according to a recent comScore study. Brian Jurutka, comScore vice president of telecommunications, says much of the growth can be attributed to increased use of video streaming and peer-to-peer sharing and to decreasing broadband rates, which are becoming more competitive to dial-up. comScore's study found that, over the past two years, broadband penetration in rural areas with populations of less than 10,000 has increased 16%. Metropolitan regions with more than 50,000 in population saw an 11% increase. Areas with populations of between 10,000 and 50,000 saw a broadband growth rate of 14%. Overall broadband penetration in rural areas averages 75%; the nationwide average is 89%, according to comScore.

AT&T Faces Age Discrimination Suit

AT&T, the largest U.S. telecommunications provider, is facing a lawsuit brought on by the U.S. EEOC (Equal Employment Opportunity

Commission) that claims the company committed age discrimination. The accusations are a result of AT&T refusing to rehire workers who previously retired from the company under early retirement plans. Nearly 50,000 people left AT&T under the retirement and severance programs that the lawsuit cites; however, details on how many people tried to be rehired is unknown. Michael Coe, an AT&T spokesman, did not comment on the suit itself but did say that the company does not tolerate any kind of discrimination and that diversity and inclusion are of top priority.

IBM Could Use DNA To Create Smaller Chips

IBM, along with the California Institute of Technology, announced that they have discovered that DNA can act as a "scaffold" for microscopic materials used in creating microchips. Incorporating DNA patterns into chip production would enable IBM to uphold Moore's Law, which states that the number of transistors that can be placed on a chip doubles every two years. Scientists have been able to achieve Moore's Law since the late 1950s by shrinking components. But the cost to reduce component size has been a challenge in keeping up with Moore's Law, says Spike Narayan, IBM's manager of science and technology at the Almaden Research Center.

Yahoo! Ad-Acceptance Causes Trouble

Yahoo! is being accused of accepting advertising from unreliable online pharmacies that sell drugs without valid prescriptions. Legitscript.com and KnujOn.com report that they were able to perform "blind buys," or purchases that don't require a user to acknowledge their identity, to purchase drugs from sites that advertised on Yahoo!. Yahoo! and other search engine sites such as Google utilize the services of a firm called PharmacyChecker.com to make sure advertising pharmacies are legitimate. However, Legitscript.com and KnujOn.com say that even with this protection they were able to easily purchase drugs.

FEATURE PACKAGE

Security On The Go

Today's Technologies & Trends For Mobile Security

by Holly Dolezalek

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As functions that were once chained to the desktop become available in mobile devices, the demand for that functionality tends to become irresistible. But as IT managers know, the problem with new functions is that they're usually accompanied by a threat to security, which employees may not understand or be willing to help combat. "It's an age-old fight: When it comes to balancing security and convenience, convenience almost always wins," says Mike Dunleavy, president of Diginonymous (www.diginonymous.com), a mobile security company in Seminole, Fla. And as the ways to be mobile expand, so do the associated security threats.

Mobile computing involves a variety of devices, such as smartphones, laptops, and netbooks, and the ways they can be compromised are myriad. Here's a look at what's going on in the mobile security space to help SMEs protect their mobile workforces.

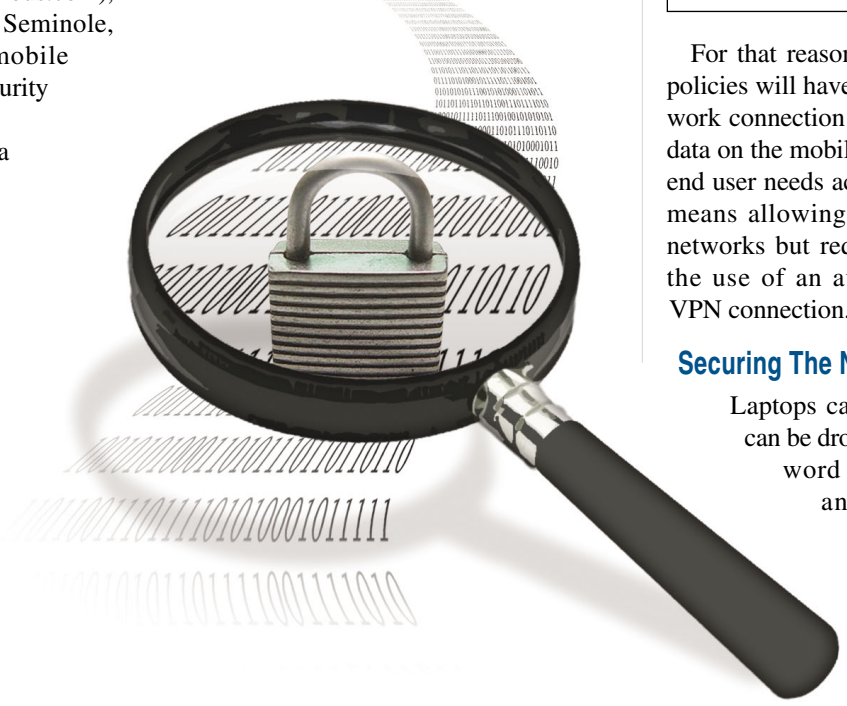
Encryption Is Vital To Device Security

One security problem has hounded mobile devices from the beginning: intercepted conversations. Any travelling executive who has a conversation about next quarter's revenue projection can later learn that a competitor intercepted that conversation. "It's fairly easy to tap into a cell phone conversation, but the business world doesn't really understand that," Dunleavy says. For that reason, he believes that there will be more interest in voice encryption, including VoIP encryption.

Other types of messages are also at risk. Text messaging, for example, is an increasingly popular communication method, Dunleavy says, and so is instant messaging. These messages, regardless of the device used to send them, can have sensitive data either in the text of the message or attached as a file, and Dunleavy says companies are catching on that all content that goes from one device to another or to a network needs to be encrypted. "It might sound unlikely, but inside-track information in the business world is worth its weight in gold," Dunleavy says. "It wouldn't take a lot of effort to get access to the SMS traffic of a particular business, especially if the end result was tempting enough."

Even video encryption is becoming an important concern in the mobile security landscape. Whether it's on a laptop, a USB drive, or a BlackBerry, the wrong video in the wrong hands could cost a company a lot, and Dunleavy notes that encryption on all of these devices is the wave of the future.

David Ferre, product manager for endpoint security at Novell (www.novell.com), agrees. "In a recent study, 53% of respondents said that they wouldn't be able to determine what data was lost if they lost track of a USB device," he says. "If companies don't encrypt, that mobility that is so prized can become a threat to the health of the enterprise."



Protecting Data Transmission In The Wild

The transmission of data from one device to another is also a problem area for security. "Guaranteed, the wireless network in a hotel business center is infected with keylogging software," says Dunleavy, referring to the software that tracks every keystroke a user makes on a device, enabling a hacker to capture passwords and potentially other sensitive information from a laptop. "As soon as they clean it up, that software comes right back, and the average executive traveler has to be wary of those networks."

> "Guaranteed, the wireless network in a hotel business center is infected with keylogging software."
>
> *- Diginonymous' Mike Dunleavy*

Key Points

- Your mobile security plan must cover not only smartphones and laptops but removable storage and any other devices that connect to your enterprise's network.
- Data encryption, password protection, and secure VPN connections are essential tools in keeping both mobile devices and the networks they connect to secure.
- Consider dictating when and how mobile devices are allowed to connect to the network.

For that reason, Novell's Ferre says, IT policies will have to dictate the type of network connection to control and secure any data on the mobile device being used. "The end user needs access to that data, and that means allowing them to use those open networks but requiring—and enforcing—the use of an authenticated and secure VPN connection."

Securing The Network

Laptops can be stolen, smartphones can be dropped in cabs without password protection enabled, and any device can pick up a virus or keylogging software or other malware. But deliberate breaches are a problem, too. "You have to keep in mind that a lot of breaches happen behind the firewall," says Grant Ho, senior solutions marketing manager for endpoint management at Novell. "That might include employees who surreptitiously put data on their iPod, a smartphone, or another mobile device, or it might include someone who hasn't secured their mobile device and brings a virus or other malware into the company." It's important to make sure the data and the device itself are protected, but companies are going to have to think about how to keep the network secure so that these new threats can't get in—and data can't get out—even in the case of mistakes or deliberate theft.

For some companies, that increasingly means establishing when and how mobile devices are allowed to connect to the network. Enterprises might want to consider security software that dictates whether flash drives and other mobile devices can connect to the network based on whether those devices have recognized serial numbers and/or whether they have antivirus software, password protection, and data encryption running. In the future, rather than being the norm, the ability to attach a USB drive to a company desktop is likely to become the exception. P

Most Promising Technology: Remote Wipe Capabilities

Even encryption is not necessarily protection against a hacker who gets hold of a mobile device, whether by finding it or stealing it. Mobile devices are easy to lose, especially smartphones, and in the right hands, encryption can be breached.

For that reason, functionality to remotely destroy a device is becoming more commonplace. Already, some phones have functionality so that, if the phone is on, its location can be pinpointed, and the user can instruct it to self-destruct so that the data is destroyed.

FEATURED PRODUCT

Built-In Server Control

ATEN's KL3116T LCD KVM Lets You Control Multiple Servers With The Touch Of A Screen

by John Brandon

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In a data center, control is tantamount to smooth operations and superior IT services. Conversely, lack of control over the center's high-tech equipment leads to disorder and chaos. ATEN Technologies' KL3116T LCD KVM is a hybrid product that gives managers a high level of control over servers in a data center. It's a unique product in that it is part KVM (keyboard, video, mouse) and part touchscreen LCD with an attached keyboard. In many ways, it's like having a laptop built into the rack—in the 1U size—that allows you to access multiple servers from one console, without the headaches of a typical KVM that is essentially a junction box for running video and control input. Designed primarily for data centers running multiple digital video recorder terminals, such as a video production house, the KVM LCD also works well for any data center in an SME, especially for those that need direct access to servers.

KL3116T Features

- Provides access to up to 16 servers in a data center
- Is ideal for video production, labs, and data centers
- Can be daisy-chained with up to 31 other switches for control of 512 servers
- Does not require any additional software to run
- Has USB ports for attaching external devices
- Offers touchscreen control for KVM functions and software for video selection

"This is a new product for us. It is a 16-port, 17-inch dual-rail KVM switch that handles multiplatform environments with peripheral port sharing and can easily work with attached flash drives, with an external mouse and secondary console port, and the touchscreen LCD," says Aaron Johnson, a field application engineer at ATEN (www.aten-usa.com). The overall design is to allow access to multiple servers from a single console interface, allowing it to work well in any environment.

Product Design

The KL3116T LCD KVM is designed for industrial use and video control, because at the touch of the screen, you can switch video terminals easily. For data centers in any industry, having the LCD is important because you don't need to run a separate KVM switch to a terminal at a desk. (In this scenario, you push a button to see servers, but the KVM itself is not aware of which server you are controlling.) The LCD KVM installs directly into a 1U rack. The keyboard is retractable, which means you can push it into a recessed cavity and control servers just using the LCD touchscreen.

ATEN
Simply Better Connections™

The touchscreen is a major advantage for easy access from a data center rack. There are what Johnson calls "quick tap" commands, designed out of the box for video production data centers. In these industrial environments, video servers are used in a data center for multiple video production suites; for example, a television studio might use the LCD KVM to switch between multiple servers.

"The touchscreen is an added feature. Not everyone will need it because there is not a major difference in price between the touchscreen model and other KVMs without a touchscreen," says Johnson, who explains that the touchscreen applications could be customized for adjusting server settings.

Johnson says the biggest advantage to using the LCD KVM in a data center is the savings on space. Many data centers, especially in the current economic downturn, are fighting space constraints as the business expands or changes, and data centers are often not located in a large space dedicated only to the data center, so changes are more common. With an LCD KVM, the self-contained unit provides direct access without requiring that a data center manager install a separate LCD or use multiple KVM switches, which can create more complexities and management overhead.

"With real estate being more of a concern in a data center, you are saving U space. [Unlike] the old days when you had a 6U LCD with a pull-out keyboard and mouse, a lot of people are moving toward a KVM or an LCD console that has one use. But this product keeps it all in one U space."

The design helps with heating and cooling, airflow concerns in the data center, and space control issues because it works with 16 servers and takes up only one space in the rack.

ATEN Technologies KVM LCD KL3116T
(888) 999-2836
www.aten-usa.com

Description: A KVM with an LCD touchscreen and a keyboard that tucks inside the unit so you can access the touchscreen only.

Interesting Fact: ATEN claims that its KL3116 LCD KVM is the only touchscreen KVM for data centers.

Upcoming Features

Johnson says one advancement for the LCD KVM in the future will likely be an Ethernet port for KVM control over IP, which is a fairly recent innovation in the IT industry that allows managers to use the KVM from much greater distances, connecting to servers as a client device.

"There is less opportunity for failure with a CAT 5 device [because an IP connection is sometimes more reliable than KVM cables], and of course you get the advantage of a longer cable," says Johnson.

Johnson also mentions that the LCD KVM may spur new software innovations, suggesting that the touchscreen terminal could run software that allows managers to do more than just switch terminals, but to run software on those servers, as well, and control data center functions.

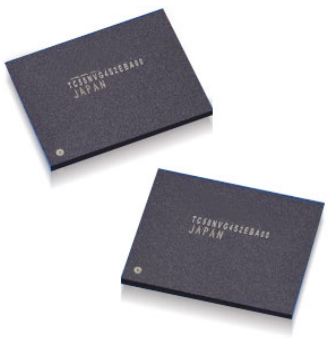
In the end, an LCD KVM provides an ideal system for controlling data center servers by loading directly onto the rack with the potential for additional applications such as touchscreen control for server functions. For a data center manager, it means easier access to critical systems. P

News

Intel & Micron Connect On New NAND Chips

Expect new NAND flash memory chips using 3bpc (bit per cell) MLC (multilevel cell) technology to be ready for mass production in the fourth quarter from the development and manufacturing partnership Intel and Micron have forged called IM Flash Technologies. The companies recently announced 3bpc MLC chips will be manufactured in 32Gb densities based on a 34nm manufacturing process, which will allow for greater densities than current NAND technologies.

Micron is currently sampling the new 3bpc chips, which Intel and Micron hail as the "industry's smallest and most cost-effective" 32Gb chips currently available on the



market. In a statement, Brian Shirley, vice president of Micron's memory group, said the announcement "further highlights that Micron and Intel have made great strides in 34-nanometer NAND, and we look forward to introducing our 2xnm technology later this year." Measuring 126 x 126mm, the 32Gb 3bpc chips reportedly represent an 11% reduction in size from current chips. Previously, SanDisk and Toshiba announced their own 3bpc technology to go into production during the second half of this year, with 4bpc development set for the first half of next year.

Rather than the one bit per cell that SLC (single-level cell) or two bits per cell that current MLC technologies store, 3bpc technology puts three bits to each cell, allowing for higher densities in a smaller size. However, in addition to taking longer to read and write than SLC- or MLC-based technologies, 3bpc technology provides fewer write cycles. Thus, rather than putting the 3bpc technology into use in Intel's SSD drives, IM Flash Technologies will limit the use of the technology to flash cards and USB drives for now.

Milestone & Progress

Deborah Paquin, president of Strategic Communications and an Intel spokesperson, says, "Intel sees this announcement as a manufacturing milestone and progress toward 2xnm technology that will lead to future products that will be smaller, have more capacity, and be cost-effective." Paquin adds that the breakthrough could lead to new developments in SSD drives.

In the server arena, Paquin says, SSDs are faster and more durable and reliable than hard drives, and one SSD can replace several HDDs. "All those same benefits are enjoyed by SME users," she says. Paquin adds that Intel recently announced an up to 60% reduction in pricing on its X25M SSD for notebooks and PCs because of the shift to a 34nm process technology. "That is an example of why continuing to move to leading-edge processes, such as 3bpc [and] then 2x technology, help lead to new innovative products or lower prices."

by Blaine Flamig

CASE STUDY

Event Logging & Management Pros

LogRhythm's Logging Solution Is A Slam Dunk For Phoenix Suns

by Robyn Weisman

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PUTTING ASIDE THE UNUSUAL HEIGHT of some of the individual members of the NBA team, the Phoenix Suns organization is a typical SME. Its IT network is made up of about 40 servers for its 350 users, yet the IT department itself consists of only four data center employees, including Vice President of IT Bill Bolt, and another employee who works as a combination administrative assistant and help desk manager.

Bolt's department is responsible for more than just the basketball team itself. It supports IT for the Suns' US Airways Center and all the events that take place there, including the WNBA's Phoenix Mercury and live musical events, most recently concerts by Depeche Mode and Green Day.

Bolt says that as the Suns' IT infrastructure continued to grow, monitoring the logs of each server to ferret out security, program, and mechanical issues became increasingly problematic. "It would take another full-time employee each day just to review the status of stuff, and I was not going to be able to increase our staff," Bolt says.

Then Bolt learned about LogRhythm's Log and Event Management System (www.logrhythm.com). LogRhythm's solution provided the Suns with a proactive means of alerting Bolt and his staff when, say, a server was running out of space in time to prevent an outage or some other calamity from taking place. Bolt checked out a few other competitors, but none of them offered the functionalities Bolt and his team needed.

"I sold [LogRhythm] to our CFO and upper management as being a tool that would act as another person assigned to the department [without] the overhead cost of salary and benefits," says Bolt. "In addition, LogRhythm allowed us to be more proactive when it came to our servers and management of IT."

LogRhythm Log & Event Management System

An integrated log and event management solution that provides users the ability to automatically monitor potential internal and external security threats, IT audits, and application and database health. Typically comes as a turnkey appliance, although a software-only version is also available.

"I sold [LogRhythm] to our CFO and upper management as being a tool that would act as another person assigned to the department [without] the overhead cost of salary and benefits. In addition, LogRhythm allowed us to be more proactive when it came to our servers and management of IT," says Bill Bolt, vice president of IT for the Phoenix Suns.

(303) 413-8745 | www.logrhythm.com

Another Pair Of Eyes

Bolt points out that IT is a 24-hour a day job for companies of his size. "We're employees from 8 to 5 per se, but the reality is we're called on weekends, nights, or whenever. And especially with our sport being basketball, we have games at those times," Bolt says. "I don't want to find out before a 7 o'clock evening game on a Saturday, when one of my employees comes in at 4:30, that we've had mechanical problems that prevent us from using some of the technology that would be needed to run that game."

LogRhythm works by extracting all the logs of the servers, firewalls, and other network devices and monitoring them for error message codes and other rule sets. If LogRhythm finds something abnormal, it notifies at least two members of Bolt's staff via SMS, email, and phone. Oftentimes Bolt and his staff are able to correct the problem remotely rather than rushing to the office at all times of the day or night.

More importantly, LogRhythm forewarns Bolt and company of security breaches that in the past would have only been discovered after the incident had occurred. "Unless I had a moment to look at the log file, I might not notice [the attack] for two or three days. Now I'm going to be notified right off the bat when my firewall records that somebody attempted to hack into it," Bolt says. "It gives us another pair of eyes."

As a result, Bolt and his department have become much more aware of what's happening in the server room, allowing them to be proactive in a way that wasn't before possible. "With LogRhythm, we can set different security levels or important flags about certain issues [so that] we find out about it right away and are able to react to it to prevent outages in our operations," Bolt says. "We're monitoring our payroll system, our accounting databases and sales databases, [among other infrastructure]. All these things we're keeping up on and are aware of the critical issues as soon as they happen."

Ease Of Operation A Driving Factor

Although money was an important driver in the Suns' purchase of LogRhythm,

CASE STUDY

No Waiting For Data

Panasas ActiveStor Network Storage System Offers Scalability, High Performance

by Julie Sartain

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IMAGINE A SCALABLE NETWORK storage system designed especially for technical and scientific applications; a storage system running apps that require clusters of servers numbering from tens to tens of thousands. This type of system would let many users and/or servers share data needed to perform tasks such as analyze the stock market, simulate airflow over an airplane wing, or design a new pharmaceutical compound.

The ActiveStor network storage system by Panasas (www.panasas.com) is one such high-performance system that provides data to the servers at lightning speeds and minimizes and/or eliminates stalled applications, which means no waiting for the data.

I/O Importance

After the successful launch of the CU-CCMS (Clemson University Computational Center for Mobility Systems), a comprehensive computational engineering problem-solving center, the team realized the importance of having parallel I/O capability integrated into its dedicated HPC (high-performance computing) infrastructure.

"We decided that we wanted a seamlessly integrated hardware/software solution to resolve this important issue," says CU-CCMS Executive Director James H. Leylek, Ph.D. "In addition, it was important for us to have a scalable system, which can be expanded to hundreds of terabytes capacity in a modular fashion. And finally, we wanted a system that could be implemented within just a few days—it was unacceptable to have a team of people working for weeks or months to make a parallel I/O system operational."

As a comprehensive computational engineering center, Leylek says, CU-CCMS focuses on complex problems encountered in the automotive, aviation/aerospace, and energy industries. "We resolve an unusually wide range of problems such as multiple, massively large-scale simulations at one extreme and hundreds of relatively small simultaneous runs at the other extreme. Especially in transient (or time-dependent) computations, there is an inherent need to repeatedly save hundreds of large results files throughout every simulation."

According to Leylek, this situation quickly makes the HPC system "I/O bound," which prevents the engineers from realizing the full potential of what is a carefully balanced 35 teraflops system—one of the top 200 supercomputers in the world, according to the latest Top 500 list (www.top500.org), and dedicated solely to CU-CCMS. CU-CCMS had to graduate from a serial I/O system, which required many hours to read and write either a few massively large files or hundreds of smaller files all in series.

Solving The Problem

Effectively solving this problem required the implementation of a parallel I/O storage system. CU-CCMS looked at several options: Panasas ActiveStor and a number of competitors that all provided software-only solutions that required time and effort to integrate with a battery of disk hardware. "We were determined to avoid time-consuming solutions," Leylek says. "Also, we really wanted to connect our powerful SunBlade compute grid to the parallel I/O storage through IP-over-IB technology, making full use of our outstanding 20GBps Voltaire InfiniBand (IB) network. The Panasas ActiveStor 6200 system proved to be the best possible solution capable of resolving all of our requirements." CU-CCMS purchased a 120TB parallel I/O storage system.

When it came time to install the ActiveStor, Panasas offered to send one of its resident experts to oversee the installation, implementation, and total integration of its parallel I/O system into CU-CCMS' HPC infrastructure, explains Leylek. It turned out there was never a need for the physical presence of Panasas' staff. All the hardware was installed, the software was operational, and the integration with the

Panasas ActiveStor

A scalable, high-performance network storage system that runs applications requiring clusters of servers numbering from tens to tens of thousands and provides data to the servers at lightning speeds, preventing applications from stalling.

"We know of instances where a team of experts invested many months to implement competing products without any success. We are delighted with the smooth and trouble-free installation of the entire Panasas system," says James H. Leylek, executive director of the Clemson University Computational Center for Mobility Systems.

(510) 608-7790 | www.panasas.com

ease of operation was equally important, says Bolt. "My employees are very good at what they do, but several of them are younger employees," Bolt explains. "Therefore, I was looking for something that wouldn't require [them] to go offsite an extra two to three weeks just to learn to run the product."

Bolt's department did not test LogRhythm before the implementation. "We felt the risk we were taking was minimal because if it didn't perform right, it wasn't going to stop us dead in the water. It just meant we were still going to have to manually look at the logs," Bolt says. In addition, LogRhythm offered the Suns a grace period that would have allowed for the negotiation of some options if the appliance didn't perform as hoped.

According to Bolt, LogRhythm's installation took only a couple of days. "[The company] actually installed it remotely with us from their offices in Colorado. The device was sent to us, we put it online and got it up and running, and then they went through the first level of training for us over the phone," Bolt says.

LogRhythm's system provided the Suns' IT staff with important information from the first day it went live, which thrilled Bolt's department. "We were suddenly getting results because it came preconfigured with a lot of standard stuff. For example, if somebody were to make a change in our Active Directory to a different security level, that routine is already built in, and we would be notified right away," Bolt says.

Grow With IT Over Time

About two months after LogRhythm was installed, one of Bolt's employees attended a week-long class at LogRhythm's headquarters in Denver. The time lapse gave Bolt's staff the opportunity to get more accustomed to the device and know what questions to ask once his employee started the seminar. In addition, LogRhythm's technical support staff will spend as long as it takes to help Bolt's staff get a resolution on any error message or rule snafu. "They are very responsive to our needs," says Bolt.

Bolt believes that LogRhythm is going to grow with the Suns' IT department over time. "We're at the beginning levels of its ability. As long as there is a log file it can look into, LogRhythm has the ability to pull back any sort of information for you," Bolt says. And, he notes, "it doesn't take a vacation, either." P

LogRhythm®
COMPLY. SECURE. OPTIMIZE.

CU-CCMS system was completed in just a few days.

"Our original wish for a complete hardware/software system to be made operational without the need for prolonged development effort was realized," says Leylek. "We know of instances where a team of experts invested many months to implement competing products without any success. We are delighted with the smooth and trouble-free installation of the entire Panasas system."

With ActiveStor, extremely large files, which required hours of read and write times using the serial I/O system, can now be handled in minutes by the CU-CCMS staff, Leylek says. Whole new classes of problems are now well within the reach of the CU-CCMS HPC system. "We now have clear options to expand into the probabilistic analyses in support of probabilistic design in a diverse set of fields," says Leylek, "All due to the ability of our Panasas system to eliminate the painful 'I/O-bound' status of our HPC system."

Dense Blade Architecture

With the Panasas system, industry-standard computer components are configured in a dense blade architecture that provides up to 20TB of raw storage for each 4U 19-inch rackmount shelf, says Larry Jones, vice president of marketing at Panasas. Multiple shelves are configured into a single shared storage realm—a storage cluster with capacity and performance that can be incrementally scaled.

Shelves house up to 11 StorageBlades and DirectorBlades in a variety of configurations, Jones says. Each StorageBlade includes a processor, memory (storage cache), dual SATA drives in a striped configuration, and a GbE (Gigabit Ethernet) interface. DirectorBlades include a processor, memory (metadata cache), and a disk used for metadata journaling. These blades plug into the front side of the shelf's passive midplane. Dual power supplies, a battery backup unit, and an integrated Ethernet switch plug into the rear of the shelf. Eleven of the 16 GbE switch ports interface directly with the 11 blade slots.

"There are two types of switches that provide either four GbE uplinks in the Panasas ActiveStor 7000 or a 10GbE interface for the ActiveStor 8000. The ActiveStor 7000 delivers 350MBps of data throughput with GbE, while the ActiveStor 8000 delivers over 600MBps. Our third system, the ActiveStor 9000, which improves on the ActiveStor 8000 by adding a solid-state disk (SSD), improves the system's ability to handle small and random data access requirements by more than double," says Jones.

Better Than Expected

Leylek says that no one could pay him enough to say wonderful things about Panasas' products, support, and services unless it were true. "I am proud to share what is truly a wonderful experience we are enjoying with all aspects of our working relationship with Panasas, its products, services, and support. In all honesty, without any exaggeration, we are happy to announce the fact that CU-CCMS is extremely happy with this Panasas acquisition." P

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Management Over The Web

Para Systems Minuteman RPM 1521 Lets You Monitor, Control Two Devices

by Nathan Lake

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Dealing with devices in remote locations can be a real headache, especially if the solution to the problem is as simple as power cycling the equipment. Para Systems Minuteman RPM 1521 gives you the ability to monitor and turn off or on two devices using a single IP address, so you can restart connected devices from any computer with an Internet connection. The RPM 1521 can also provide notifications of power status via email, SNMP trap, or SMS text messages. According to Bill Allen, director of marketing at Para Systems, "receiving notifications that there is a problem with an attached device is very useful, because immediate notification can allow faster response to a problem, rather than hearing about the problem from angry users on the network."

The RPM 1521 includes an auto-ping feature, which provides immediate notification and/or immediate reboot if an attached device is not responding. You can also configure it to automatically start up or shut down individual devices at a specific time. "Having a power start sequence can be beneficial if, for example, one device needs to be rebooted before another device," says Allen. The RPM 1521 provides surge protection for the attached devices, and it features an input circuit breaker to provide overload and connected equipment protection. Para Systems covers the RPM 1521 under a three-year parts and labor warranty.

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HOW TO

Prevent & Detect Security Breaches

What Should You Do To Protect Your Enterprise?

by John Brandon

• • •

THE FIRST STEPS YOU TAKE in protecting your company from a security breach are often the hardest. How do you know where to start? And what do you do to protect networks, servers, data, and your employees from hackers, malware, data theft, and other breaches? As with any complex process, starting is difficult, but as most security analysts agree, the hardest part of prevention and detection might be developing an airtight policy, installing safeguards that can be easily updated, and following through to make sure your company is truly protected. This overview will explain the appropriate steps to take while also uncovering the most comprehensive approach.

Analyze Your Assets

It doesn't make sense to start purchasing security software until you know what you need to protect. According to Ralph Spencer Poore, an IT security consultant, the initiative inside a company to determine which assets need to be protected should not be a one-time step but should instead be regarded as a continual part of the process and one that is revisited often. Poore says assets should be identified using labels that help managers determine their sensitivity, such as critical or noncritical. Then, once assets are known, evaluate all current security systems in place and determine the impact on the business if these assets were compromised.

"The SME then has documentation of its information assets, a high-level understanding of what needs protection, an understanding of what protection is in place, an understanding of what is unprotected, and a general understanding of what the inside and outside threats are to these assets," he says.

Evaluate The Tools & Products Available

After analyzing assets, it's important to survey what is available in terms of security products. This step involves matching your assets and vulnerabilities to the tools available. Don Gray, chief security strategist at managed security services provider Solutionary (www.solutionary.com), says there are several key security tools for preventing and detecting breaches. The most obvious is a firewall, which is the most critical security prevention method. A firewall, he says, can segregate and protect assets by reducing the amount of access that is available to employees and those outside the company.

He also mentions several additional points of protection. Some tools are designed to block malicious attacks, while others protect against malware. Beyond that, tools become more targeted to particular kinds of attacks. "There are tools to perform data discovery and exfiltration protection; encryption tools to protect data in transit and at rest; vulnerability and discovery tools to detect new vulnerabilities, provide visibility into open services, and verify configurations; and robust logging and monitoring tools to ensure an accurate and timely discovery of a breach," says Gray.

"Pick continually updated products if you are introducing security systems in-house," adds Ron Culler, CTO of Secure Designs (www.securedesigns.com). "Note that you will have different requirements for securing various elements of your network: Latency/slow access is a problem in Web interfaces and network gateways, whereas with email systems, users tolerate a certain level of delay in download. Pick a firewall with excellent monitoring and management capabilities so you can track what's happening on your network without being overwhelmed by irrelevant data. If you don't have the resources in-house, consider outsourcing."

Costs Involved In Prevention & Detection

As with almost any IT endeavor, the costs associated with prevention and detection go hand in hand with the risks involved. Preventing breaches that would cost a company hundreds of thousands of dollars can themselves cost north of several thousand dollars, especially if you hire an outside vulnerability assessment firm. Other expenses include those related to employee time spent on research and asset analysis, equipment and software upgrades, and quality-control measures. A DIY approach where you add low-cost security tools and a firewall can cost about $1,000.

TOP TIPS

- During the asset analysis phase, an SME should be aware of which assets are highly sensitive to breaches and which are not as sensitive. This can help when analyzing the security offerings available. For example, an enterprise-class firewall might not be necessary if certain kinds of data do not need to be as secure as other parts of the network.
- Costs associated with preventing security breaches and detecting intrusions might include the cost of software, employee research and analysis time, and upgrades to existing equipment.
- Most of the benefits for an SME in instituting a security prevention measure are in the uptime for the company itself and for IT staff, who can work on other tasks instead of dealing with breaches.

HOW TO

Getting Ready For Virtualization

Decide What's Right For Your Enterprise

by Curt Harler

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SERVER VIRTUALIZATION HAS BEEN THE BIG buzz in data center operations for only about four years. But today, virtualization is going beyond servers. Costs have dropped markedly, making the price tag on virtual servers lower than physical costs.

In a time-crunch, the key gain in server virtualization might be quick implementation of new servers. However, as time passes, the IT department is likely to be happier with the ease of upgrades and migration of servers as well as the simplification of maintenance.

There are a host of other benefits to server virtualization, as well, including longer total uptime, high availability, simplified management, lower power consumption, and less required cooling, says Richard Bongard, president and CTO of Insite Computer Group (www.insiteco.com). Longer server life cycles and lower management and implementation costs are additional benefits that can be seen down the road.

However, before you consider the benefits of server virtualization, you need to evaluate whether your enterprise is ready for such a task. Read on for more tips to help you decide.

First Steps

"It is important to know your current costs," says Bongard. His starting point would be to look at such factors as what it costs for space, power consumption, air conditioning, ports on the company's switches, servers, software, and the like. "Knowing your costs will make the jump to virtualization a no brainer," he says, as most SMEs should need nothing special to begin a server virtualization implementation.

And most IT companies have plans to change or upgrade an existing server in their budget, Bongard notes. "Start there. Take that budget and purchase the server, and turn it into your first VM host," he advises.

However, John Consoli, chief technology officer at AFCO Systems (www.afcosystems.com), warns: "Don't assume that virtualization will save space." In high-rent areas, many assume there will be a lower total footprint in the data center; however, the cost savings associated with virtualized environments sometimes lead to more applications and more servers overall, he says.

Remember The Ancillaries

With any move to virtualization, it is important to remember the rest of the network, as virtualization usually means migration to blade servers and increased density.

"Don't overlook the need to modify or upgrade support infrastructure—power, cooling, and cable management," reminds Consoli. He says SMEs should remember that in a virtualized blade environment, each cabinet "virtually" becomes a mini-data center that needs to have its own power, cooling, and management plan.

"Selecting your virtualization platform is just the beginning," agrees Eran Farajun, executive vice president for Asigra (www.asigra.com).

"The applications that run on top of your virtualized environment can add or take away the benefits received through virtualization," Farajun says. Improperly architected solutions can drain server memory, absorb I/O, and escalate management requirements. "Deploy VM-optimized solutions that add efficiencies to gain the real value that virtualization promises," he says.

When planning, expect virtualization to expand in the data center. "Virtual I/O is

TOP TIPS

- The break-even point for virtualization is roughly three servers, according to Richard Bongard of Insite Computer Group (www.insiteco.com), "When you purchase a host server you will typically purchase a higher-end server, with as much redundancy as you can afford," he says. "Servers will be responsible for running many instances of virtual machines, so having a good quality redundant hardware server will mitigate any downtime," he adds.
- Building a virtual server environment takes planning. Make sure you create some test servers to get an understanding of what can be accomplished and what you want to accomplish. Also understand the drawbacks and consider what the challenges will mean for your enterprise.
- John Consoli, chief technology officer at AFCO Systems (www.afcosystems.com), recommends that SMEs use CFD (Computational Fluid Dynamics) and other predictive tools to create "what if" scenarios to weigh the impact of changes. "Proper planning prevents poor performance," he says.
- If you decide to implement server virtualization, remember that there will be a learning curve for IT staff, Bongard notes. "IT's ownership of virtual environments requires knowledge in additional areas including SANs and switching," he says.
- As applications are layered on top of virtualized environments, test for performance and operational efficiency with these applications fully active, Asigra's (www.asigra.com) Eran Farajun advises. Be prepared to consider alternatives should red-flag applications be discovered.
- SMEs should make sure they understand the particulars of a vendor's licensing agreement. Bongard says it is key to know the ins and outs of Microsoft Server Licensing and how it works with virtual servers. "That can save you thousands of dollars."

"If you don't have the resources in-house, consider outsourcing," says Doug Pollack, a spokesperson for ID Experts (www.idexpertscorp.com). "This would include the development of a data breach incident response plan, which is critical for an organization's preparedness. It is also recommended that an organization develop a relationship with a data breach response partner so that they are prepared to respond swiftly if an incident occurs."

"If a potential incident has been discovered, the forensic analysis works to determine whether the incident constitutes a 'data breach' for the purpose of triggering notification requirements based on the HITECH Act if in the healthcare sector and/or relevant state notification laws. Such an effort can be quite costly, often running in the hundreds of thousands of dollars, typically unbudgeted," Pollack says.

The costs may be high for a security assessment, but the benefits for an SME are great—especially when it comes to avoiding the high costs and entanglements that occur with a breach. And Chris Sousa, manager of managed services at Dataprise (www.dataprise.com), a security consulting firm, says that there are benefits in avoiding the lengthy legal process that can occur with a security breach. "The biggest benefit is increased uptime and productivity."

Follow Through On Security Steps

One critical part of the security prevention and detection process is to follow through on all plans, as the process is not just something an SME should do for a week or a month by installing software to protect data and networks and then leaving the system alone in hopes that a breach does not occur. Follow-through means continually monitoring the possibility of a breach as well as the protection mechanisms themselves to make sure they are working correctly and updated appropriately.

"Keeping up with security can easily be a full-time job," says Sousa. "Something that would help is having regularly scheduled security probes, which should be monthly, quarterly, or yearly, depending on your size, the complexity of your data center, and the sensitivity of the data."

In the end, following a set plan to analyze company assets, installing security protection, weighing the benefits, and then continually monitoring the security measures you instituted will help reduce any doubt about incoming threats and attacks—the process may take time, but the benefits are in knowing that data is safe and your IT staff can concentrate on more important activities. P

Key Points

- You should first analyze your environment, infrastructure, and assets to understand the kinds of precautions you will need to take.
- Invest in security software and firewalls only after having a good understanding of what you need to protect and how sensitive each server's data is.
- Costs will include the security software and also the upgrades required for servers, networks, and end users' computers.

Lower TCO, Higher Performance

Adaptec MaxIQ SSD Cache Performance Kit Improves Application I/O

by Seth Colaner

• • •

"TOTAL COST of ownership" is often the name of the game in today's data center, and IT managers are always looking for means of lowering TCO as they require high-performance and scalability.

Adaptec's MaxIQ SSD Cache Performance Kit is designed to accelerate the performance of application I/O by up to five times that of traditional hard disk drive-only arrays, all while lowering capital and operating expenses. It does so by using less hardware to generate greater I/Ops, which reduces the need for additional hardware as companies scale upward.

By leveraging an SSD-based caching architecture, the kit is application-agnostic and avoids any need to change storage architectures, application software, or operating systems. Rather, the kit is designed for seamless integration into any industry-standard platform.

The MaxIQ SSD Cache Performance Kit includes the Learned-Path Algorithm, which recognizes data that is frequently read and stores it in an SSD cache so it can retrieve the data even faster when it's requested.

The kit is Adaptec's next step in its data conditioning capabilities, which include unified platform management, zero maintenance, power management, intelligent data routing, and data protection, all between the I/O of servers and storage.

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the logical next step beyond shared storage and shared processors," says Jon Toor, vice president of marketing for Xsigo Systems (www.xsigo.com). "It has just as much, if not more, potential to revolutionize the data center as either of those technologies."

"Storage is a perfect example of where we've already virtualized outside the server," Toor says, noting that just a few years ago, most servers had their storage built in. That direct-attached storage, or DAS, could not be shared. That was fine then because applications ran on specific servers, connected to specific networks and storage.

"By definition, the storage, application, and processor became locked together," Toor says. "We've since moved storage outside the server and have achieved tremendous economies in storage, capital costs, and utilization."

Tough Parts

While there are big paybacks to virtualization, it is not sweat-free. Bongard says before anyone can build their first virtual server environment, they must plan ahead:

"Write down your goals for your lab. Create some test servers and get an understanding of what can be accomplished."

Server virtualization does have drawbacks. Experts say most can be overcome through hardware and software, though that means further investment. Virtualization also requires a lot of connectivity, Toor says. "Between network connections, management, and external storage, six to eight Ethernet connections per server are common, plus two Fibre Channel connections. The total costs, including switches and cabling, can exceed $7,000 per server."

However, I/O virtualization can cut that cost in half, Toor adds. With up to 64 connections to each server, this allows plenty of expansion capability for future requirements. With that in mind, Toor suggests that SMEs should not view virtualization as a point solution. "It's a new way to look at the data center."

Also, the area of data protection can drive significant costs related to server virtualization if not approached properly, Asigra's Farajun says. "Storage requirements typically increase in a virtualized environment, as does the cost of management," he says. Backup and recovery solutions that provide global deduplication across VMs can help address this, as can solutions that centralize the process.

Finally, ongoing monitoring is important, Bongard says. Because virtual environments rely on hardware, failures can be devastating to a virtual environment. Server failure can result in multiple machines being down . . . a disaster when uptime is key.

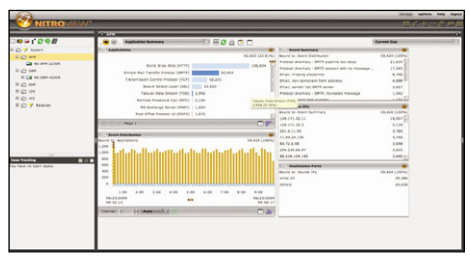
"Monitor your physical hosts [that are] utilizing the manufacturer's specific monitoring tools to ensure you are notified of any hardware failure or potential hardware failure," he says. "Monitoring a virtual environment is key for success." P

Key Points

- When deciding if your enterprise is ready for virtualization, plan carefully to avoid poor performance.
- Know your current costs. Also consider whether plans to change or upgrade an existing server are already in your budget.
- Remember that virtualization requires lots of connectivity, which could translate into additional costs.

Appliance-Based Monitoring

NitroSecurity NitroView Application Protocol Monitor



by Seth Colaner

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COMPLIANCE AND SECURITY are two facets of IT that are constantly on the minds of IT and data center managers. Keeping track of who is accessing sensitive data and preventing data loss can be difficult to do.

NitroSecurity's NitroView APM (Application Protocol Monitor) is designed to monitor applications and protocols in real time through deep packet inspection and application content decoding, enabling managers to receive alerts, view details of the event, and react accordingly. APM supports hundreds of types of applications and documents, thus making it easy for users to customize rules to enforce policies.

APM integrates fully with NitroSecurity's NitroView ESM (Enterprise Security Manager) SIEM platform, which gives users a number of security features in one user interface. According to Eric Knapp, director of product marketing at NitroSecurity, "NitroView ESM is the only SIEM that can support the amount of data that would be generated if you were to monitor and decode application and protocol traffic and then correlate that to everything else that the SIEM is already doing. Because NitroView ESM can do that, we developed the NitroView APM to provide that level of monitoring."

APM, like NitroView ESM, is appliance-based with no licensing, meaning it's a plug-and-play tool and simple to deploy. Also, Knapp continues, "Nitro-View APM is providing many of the features of a full, dedicated DLP system, but at a fraction of the cost. What this means is that you can protect against insider theft, fraud, and both accidental and intentional "leakage" of data without a lot of additional cost."

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NitroSecurity NitroView Application Protocol Monitor

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News

Study Shows Multitaskers Are No Good At Multitasking

Researchers at Stanford University recently published the findings of a new multitasking study that looked at college students who use multiple devices at once. The study found that these "media multitaskers" generally performed poorly in memory, attention, and task-switching tests. The researchers were generally surprised by the study results that showed that seasoned multitaskers were outperformed by non-multitaskers when asked to focus on one group of colored shapes and disregard another group of colored shapes. The non-multitaskers were also better at switching from one task to another.

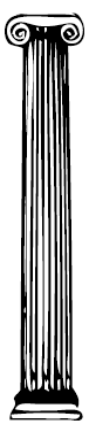
FCC Plans Investigation Of Wireless Industry

The Federal Communications Commission announced that it plans a series of inquiries into the wireless industry, including examinations of billing practices, exclusive handset agreements, competition, and technology advancements. Billing practices are of particular concern to the commission, which plans to look into truth-in-billing rules to ensure that customers are more aware of charges in their bills. Also of concern are the handset deals manufacturers make with wireless providers, such as Apple's exclusive iPhone deal with AT&T; the FCC plans to investigate whether such deals hinder competition or limit consumers' choices.

Microsoft Faces More Suits

Speech recognition systems company Allvoice Developments U.S. has filed a lawsuit claiming that Microsoft has violated its speech recognition software patent in Windows XP and Vista. EMG also filed suit against Microsoft asserting that Windows

CE, PocketPC, and Windows Mobile infringe on EMG's mobile device patent. These companies filed the suits in the U.S. District Court for Eastern Texas, which is the same court that earlier ruled that Microsoft must pay Toronto-based software company i4i $240 million for a case i4i won over patent violations. Microsoft is appealing that ruling.



DoJ Approves Oracle/Sun Deal

Regulators at the Department of Justice cleared Oracle's $7.4 billion acquisition of Sun Microsystems. The DoJ's decision comes after it extended its review of the merger in June to answer questions related to licensing of the Java programming language, which Sun owns. European Commission antitrust regulators were to make a decision to approve the deal or begin a more detailed investigation by early this month. Oracle announced its bid for Sun in April after Sun rejected an acquisition offer from IBM. Sun shareholders approved the deal in July.

SERVERS & STORAGE

Of Special Interest To:
Health
Education
Government
Data Centers

Satellite Office Storage Strategies

Find The Best Fit For Different Scenarios

by Bruce Gain

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IMPLEMENTING THE RIGHT storage strategy for small and remote offices can be a challenge as enterprises expand geographically, workers become more mobile, and backup needs continue to explode for all users. Just the fact alone that satellite offices are separate from the enterprise's main storage hub can make it difficult for admins to manage satellite offices' backups and data archives in a coherent way.

Indeed, how to handle remote-office storage and backup needs is "a surprisingly complex question," says Robert Enderle, an analyst for the Enderle Group. "The more critical the data, the greater the need for real-time backups, redundant resources, and higher performance requirements," he says.

But while creating a remote office storage strategy can be complex and challenging at the outset, solutions exist that can meet the needs of most small offices. Once implemented, remote-office storage does not have to be especially difficult to administer compared to the system in place at the main site. Here is a look at some things to keep in mind when adopting a plan for the storage needs of small and remote offices.

Different Office, Different Needs

A one-person sales staffer who works from home will obviously have different backup needs than a 50-person site in Manhattan that complements the enterprise's 1,000-user headquarters in San Francisco. Unlike a staffer working from home who may just need to upload sales data and contracts directly over a VPN connection to a server at the main site, a 50-user office may require network-attached storage or other setups that are similar to those at the headquarters. So, while the mobile worker's data needs are relatively straightforward, finding the right solution for the larger satellite office can be a more complex process.

"The best approach is to first understand what the needs are. Remote campuses are often thought of as just smaller locations of the main campus, but in fact, they typically have their own unique needs," says Robert Peglar, vice president of technology for Xiotech (www.xiotech.com). "Study the usage pattern of storage—both at the remote location and of storage at the main [site]—and then implement the solution. Do not try to put in a solution first, only to discover it really doesn't match the usage pattern."

The Home-Base Connection

Workstations at small offices should be connected to some kind of redundant storage setup, of course, such as a RAID-based network-attached storage server. Even a one-person office should have some type of workstation disk redundancy to protect his or her stored files in the event of a disk failure. Some of the same rules of thumb that apply to storage strategies at the main office thus generally hold true for satellite offices when it comes to redundant-disk types of storage. However, remote offices also still need to prepare for the worst, such as a fire or another disaster that can destroy the small office and all of the data housed there.

A good way to add an extra layer of redundancy is to merge satellite office backups with data stored at the main location by using low-bandwidth data replication, says Lee Johns, marketing director for unified storage of the StorageWorks division of HP (www.hp.com).

Replicating data over a WAN is usually very expensive, but data deduplication of disk-based systems back up only data blocks that have changed from previous backups, Johns says. "[Data that has been changed] can be as little as 1% of the data," Johns says. "By sending only the changed data blocks, the bandwidth of the link needed can be significantly less."

Another alternative for disaster-recovery storage for small offices is to rely on tape for backups that is then relocated to a separate facility for safekeeping. While tape backups can be done cheaply and reasonably safely, data deduplication for remote offices can offer advantages, Johns says. "With data deduplication-enabled low-bandwidth replication, the remote office can reduce the amount of tape at the remote office and the media-handling required," Johns says.

It is also possible for data that needs to be accessed and stored to remain at the main office site, which remote users access from satellite offices or even when on the road with VPN-connections. A group of users at a small office, for example, may only need to access certain files occasionally at the main site where they upload or download data. Data can then be stored remotely on the headquarters' servers. "Depending on the type of applications and the user community, [remote-application deployment] allows the data to be stored centrally and accessed by a variety of methods depending on performance and access requirements," Johns says. "The benefit here is that the storage can be efficiently managed and protected by the data center IT staff, eliminating the need for local IT support or highly automated systems."

Regardless of whether data is stored onsite at small offices or at the main site, all users should have access to an organization's entire data set, whether they are offsite or at headquarters, says Roger L. Kay, founder and president of Endpoint Technologies Associates. "There can be some local caching and a frequent and daily reconciliation of the local and headquarters' databases (transmission and storage should also be encrypted, of course)," Kay says. "The analogy is perhaps a mobile worker, whose data set may differ from the corporate set for a period of time while the worker is traveling, but data is resynced when the worker plugs into the network, whether outside or behind the firewall."

Turning To The Cloud

In an ideal world, admins might rely on a cloud storage provider for the storage needs of all remote offices (or for the entire enterprise, for that matter). Backups would take place transparently from users' workstations and local servers on a regular basis, while users could access data immediately from the cloud with an Internet connection at any time. However, the cloud storage alternative is not necessarily ready yet for many enterprises' remote offices.

Cloud and online storage providers can usually handle small volumes of data of less than 1TB, but volumes of data larger than 1TB can pose issues, Peglar says. "So, consider the volume of data first before signing a cloud or online storage provider contract and read the SLA carefully," Peglar says.

While backing up and archiving small offices' data remotely on the cloud certainly does not hurt, tape backups, RAID-based storage setups, and possibly data replication solutions should probably be used, as well.

"The use of cloud or online storage can be a good addition for certain types of data but is rarely the only or predominant solution for small offices," Johns says. "Satellite locations are unlikely to use this unless it is in the corporate cloud."

Key Points

- No one strategy will fit all the needs of different organizations' small offices, so solutions must be tailored for specific needs.
- Local array-based storage setups and tape archives can serve small offices well, but alternatives do exist so that remote offices' data can be backed up and stored in real time at headquarters.
- Despite the hype surrounding cloud storage, small offices should, at the very least, not rely on it completely but should think of cloud storage as a complement to existing options.

Primary Concerns Of Health, Education & Government Organizations

In the case of health, education, and government organizations, legal liabilities may mean storage policies at remote offices will have specific needs. "In general, be aware of data-protection and security rules and regulations before embarking on a remote storage project for [health, education, and government organizations]," says Robert Peglar, vice president of technology for Xiotech (www.xiotech.com). "One may have to implement a special key management or other encryption scheme in order to meet the spirit (if not the letter) of the law."

Privacy, protection, classification, and security of backed-up data are "key areas of interests" for health, education, and government data centers, says Patrick S. Conway, an analyst for Forsythe. Still, the efficiency of backups for these types of organizations cannot be ignored, either. "Recoverability of data and meeting stated requirements regarding recovery time and point objectives should [always] be the special interest," Conway says.

SERVERS & STORAGE

Digital Asset Management

Because Storage Can't Grow Forever

by Carmi Levy

• • •

Network storage infrastructure is under increasing pressure to accommodate exponential growth in organizational data. Accelerating use of multimedia-heavy content for everyday corporate work is challenging companies of all sizes to ensure they have enough space to store it all. Because throwing more drives at the problem can be reactive, expensive, and ultimately inefficient, DAM (Digital Asset Management) has emerged as a more intelligent solution.

At its core, DAM involves the intake, tagging, cataloging, storage, and retrieval of an organization's digital assets, which can include anything from business files created in productivity applications to audio- and video-based content. Unmanaged storage impacts an organization in several ways, including:

Cost. Duplicate files saved across the network eat up finite drive space. Companies often overspend on storage infrastructure to compensate, a stopgap solution that only increases operational costs.

Productivity. End users searching endlessly for materials drive up project and ongoing costs and stretch out timelines.

Risk. Inconsistent use of data assets can compromise branding, decision-making, and regulatory compliance. It's virtually impossible to have a single version of the truth across the organization when everyone works off of disparate bits of information.

Stressed Infrastructure

Without any proactive storage management in place, the environment can quickly become chaotic. When the data skews toward large media files, the results are even uglier.

"DAM can alleviate strains on existing infrastructures by helping to eliminate storage costs from redundant sets of asset libraries in different locations and by keeping all assets and versions in one master library," says Widen Enterprises (www.widen.com) CEO Matthew Gonnering. "Multiple copies of a file in multiple locations use even more storage," which can make version control that much more difficult, as it requires someone to remember each file's location and then update or renew it should a new one become available or it expires.

Understanding the challenge is one thing. Cost-justifying the solution is another. Seth Earley, president of Earley & Associates (www.earley.com), says inconsistent behaviors lie at the root of the problem.

"The business case for DAM is asset reuse," says Earley. "There are many challenges to doing so in large organizations. In many situations, people store these types of files on a shared network drive but little thought is given to how to organize and retrieve those assets."

Better Storage Equals Better Business

As beneficial as DAM is to improving storage efficiency, Thomas Vernersson, president of storage management software vendor Northern (www.northernsoft.com), says the real story lies in data availability in today's increasingly distributed and collaborative work environments.

"Efficient digital asset management assures that business-critical data is available when needed; that data is streamlined to facilitate efficient, low-impact, timely backups; and that storage devices are kept from filling up," says Vernersson. "This allows organizations to defer new hardware purchases."

For all its promise, however, DAM is no magic bullet. Art Powell, president of Trinsic Technologies (www.trinsictech.com), says it may motivate the wrong kinds of behaviors.

"DAM is good for companies that have lots of files, such as images and PDF files, and want a way to catalog what they have for search and retrieval," says Powell. "However, it's not necessarily an efficient way to contain storage growth as it can actually encourage users to store everything. If a company is looking for ways to control storage growth, there are much better ways to accomplish this through network policies and implementations."

Beyond Technology

Powell adds that company-wide policies should outline user responsibilities, possibly defining personal photos and music files, for example, as unacceptable.

"By having the community or firm working in a common data environment, the resulting IT support costs can be dramatically lower," says Tracy Rosen, principal of the WH Group (www.whgroup.us). "Savings are achieved in time, continuity, and money by using a standard method of creating, reviewing, modifying, and publishing a given set of assets. The advantages are speed of asset utilization and reduction in all costs associated with the asset life cycle."

Organizations interested in implementing DAM must first listen to the leaders and workers who will be most affected by the change.

"One size does not fit all, and feature sets need to be prioritized by actual business need," says Frank Morris, sector champion of digital technology and content with UK Trade & Investment, adding companies often need to balance the need to centralize repositories with redundancy and distributed availability.

Eye-Opening Cost Benefits

The bottom-line results can be significant, and they're not limited to static data, either. When applied to redundant software installations, companies can realize major savings here, too.

"In our experience, companies can save anywhere from 20 to 30% on their software bill," says Ron Halversen, VP of marketing for TriActive (www.systemsmanagementondemand.com), adding the benefits also include 30 to 70% savings in IT costs due to streamlined support requirements. "You can do more with less, and it frees up your time so your IT department can focus on things that add more value to your company."

As hosted DAM solutions gain momentum, more organizations can take advantage of a more proactive data management maturity without incurring significant upfront capital expense.

"There is a tremendous amount of opportunity to consolidate repositories, provide secure, global access to assets and automate manual processes through DAM," says Tony Bailey, who leads Acquity Group's (www.acquitysolutions.com) Content Management team, adding that many of his firm's manufacturing and distribution clients are already using DAM to automate digital asset distribution to their suppliers and distributors. "It has allowed their marketing teams to focus on higher-value activities and less on mundane and cumbersome click, copy, and ship processes."

Which points toward a bright future for a technology just now reaching its stride.

"DAM is a great way to aggregate assets and make [them] available in a controlled, cost-effective way to highly fragmented and distributed users," says WH Group's Rosen. "If you are clear in your objectives and manage the execution, the potential payback is terrific." P

Key Points

- Business requirements are paramount. Resist the urge to implement an across-the-board IT-driven solution. Speak with each business area and let their needs guide the project.
- Asset management may trump cost savings. DAM can reduce growth pressure on storage infrastructure, but the real savings typically come from improved productivity.
- Don't forget policies. Ensure the right kinds of end-user behaviors are documented and enforced.

Finding It All While Saving A Bundle

If you're unsure of the costs that come with unmanaged data, consider these factors, then apply them to your own enterprise.

- Companies spend an average of $8,200 per person per year on file management activities. These include searching, verification, organization, backup, and security.
- Creative professionals spend an average of one out of every 10 hours of their time on file management. Their prime activity: Searching.
- The average creative person looks for a media file 83 times a week and fails to find it 35% of the time.

A digital asset management solution could help alleviate some of these costs. According to findings from GISTICS Research, a DAM system can cut the amount of time spent on file management by more than 85%. And rather than failing to find a file 35% of the time, users will not find something only 5% of the time.

Source: GISTICS Research, via Widen Enterprises

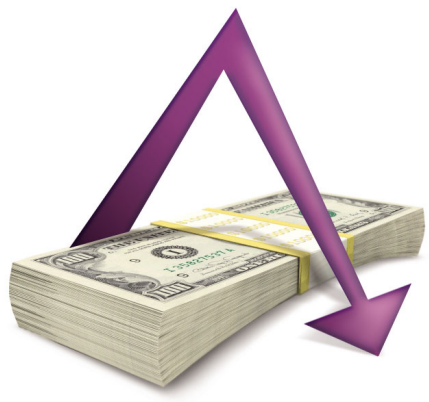
News

Cisco WebEx Chief Leaves

Doug Dennerline, chief of Cisco Systems WebEx, has left the company to be the executive vice president of sales for the Americas for Salesforce.com. Dennerline's duties at Cisco included oversight of Cisco's cloud and SaaS strategies and its products, including the WebEx line. Dennerline has been with Cisco for about 10 years. At Salesforce.com, he will be answering to Frank van Veenendaal, president of worldwide sales and chief sales officer at Salesforce.com.

Acer Profits Slide

Acer's net profit slid 20% in its second quarter because of the declining PC market. Acer's net profit for the three months ending June 30 dropped to $69.7 million. Consolidated



revenue declined by 5%. Acer leads in netbook sales, which has helped its profit margin. Acer did not provide any predictions for the future, but the company could benefit from Microsoft's new Windows 7 OS, which is scheduled to hit stores soon.

Linux Grows, With Caveats

A recent IDC study charted strong growth in Linux revenue except for a temporary setback in paid server subscriptions this year. From 2007 to 2008, the report says, global Linux revenue grew by 23.4%. IDC expects 16.9% compound annual growth for revenue through 2013, to top $1 billion by 2012. The study, entitled "Worldwide Linux Operating Environment 2009-2013 Forecast: Can Linux Prove Resilience in an Economic Slump," did not track virtualized installations, so its 1.1% CAGR of overall Linux adoption (paid and unpaid) through 2013 is likely on the low side.

Cisco Wireless Vulnerability Uncovered

WLAN security firm AirMagnet recently found a security flaw in Cisco wireless access points and has warned users about potential exploits. The vulnerability affects Cisco's OTAP (over-the-air-provisioning) function, which helps its WAPs detect and connect to one another. There is the possibility for data leakage through OTAP, as well as the potential for a WAP to connect to another nearby Cisco access point that isn't part of the network (dubbed skyjacking when used as a deliberate hacking technique). Until an official fix emerges, AirMagnet recommends turning off OTAP in Cisco WAPs.

Nokia Enters Netbook Market

Mobile phone maker Nokia has entered the netbook market by announcing its upcoming Booklet 3G. Commenting on the move into the netbook market, Kai Oistamo, Nokia's executive vice president for devices, says the company has a "long, rich heritage in mobility." The netbook will feature an Atom processor, a hot-swappable SIM card slot, a 10-inch HD display, and a 12-hour battery life. It will run Windows, rather than the expected Linux, and will connect to the Internet via 3G or Wi-Fi. A mobile data plan is expected to be bundled with the device. Nokia shares were up 1.6% following the announcement.

TIPS & ADVICE

How To Negotiate Reduced Prices

Haggling Isn't A Dirty Word, Particularly In A Tight Economy

by Kurt Marko

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Budget cuts are common for most IT departments during this "Great Recession," with more possible in the coming year. Already overworked and understaffed and facing usage demands that don't seem to reflect business conditions, some IT managers are looking for ways to make suppliers and service providers share in the pain.

"There's always a trade-off between what we call 'grief avoidance' and price, and I think in better times, IT departments will try to minimize grief as opposed to price," says Andy Woyzbun, lead analyst at Info-Tech Research Group. However, with today's constrained IT budgets, his clients are more concerned about pricing.

But the economy has been equally tough on vendors. Brian Christopher, president of Negotiation Points, a company that helps in IT contract negotiations, says that although business conditions have made it difficult for vendors to cut prices, they also can't afford to lose valuable customers, which makes it easier to renegotiate existing contracts.

Conditions are ripe for IT to improve the terms of both new purchases and existing contracts. But Suzanne Harris, a former vice president of the contracts department at a major financial institution, cautions that not all vendors are hurting. IT managers need to understand their competitive situation before assuming a discount.

Key Strategies

Contract negotiation is a professional discipline, requiring specialized technical knowledge, especially when dealing with such a complex set of products and services as IT. But experts unanimously stress preparation as the key to success. Harris says "90% of negotiation is preparation; only 10% is execution." Preparation comes in the form of market reconnaissance and understanding.

The first step in a successful negotiation is a needs assessment, in which you gather requirements and specifications, Info-Tech's Woyzbun says. He notes that up-front homework helps set realistic pricing expectations and informed contract terms, and it helps identify areas that are must-haves vs. nice-to-haves.

After assessing your needs, it's time to do some shopping. At this stage, it's essential that you understand the products, available options, and competitive market. "The people who are successful in negotiating price reductions have taken a look at market pricing or the price of equivalent products," Woyzbun says, with the necessary research to "approach a vendor and say 'everybody else is charging 15% on software maintenance, how come you're charging 18 or 22?'" He adds that even with commodity products, "If you can point to competitors that have a lower price, that gives you a fair amount of leverage."

Woyzbun notes that some vendors are notoriously stubborn on pricing. However, there are ways to eke out savings even with these tough cases, such as going through a reseller rather than buying direct, or by seeking contract extensions or other optional services. Ask preferred vendors to suggest creative cost-cutting ideas. For example, some may be open to contract concessions such as added maintenance and support services or longer contract periods for the same price.

Vendors are generally more amenable to price reductions if they see potential new business. Woyzbun says one successful tactic is consolidating spending to increase the value of the relationship. Likewise, if a survey of end users unearths problems, such as a vendor not meeting agreed service levels, response times, quality of service, or otherwise violating contractual requirements, Woyzbun advises using these as negotiating leverage.

Playing Hardball

Sometimes there's no avoiding hardball negotiating tactics. A customer's ultimate leverage is walking away from a deal. But Woyzbun says ultimatums should be used cautiously and only after doing enough

Key Points

- Pressing for pricing discounts can yield substantial savings to IT contracts, for everything from hardware and software to maintenance contracts and service.
- Negotiation success is predicated on preparation; understand the product market, pricing, and the vendor's competitive strengths and weaknesses.
- Don't be afraid of aggressive negotiating tactics, but always maintain honest, ethical standards and don't jeopardize an existing positive business relationship.

NETWORKING & VPN

Use The Cloud To Protect Email

Cut Expenses & Headaches While Archiving Messages

by Kurt Marko

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Perhaps the most overused, ill-defined, and oft-misunderstood technology term of the past year is cloud computing. In fact, according to Gartner's seminal model for categorizing new technologies, cloud computing now sits at the apex of the Hype Cycle—the precarious "Peak of Inflated Expectations." In many respects, the cloud is just the latest buzzword for established online services formerly known as SaaS, on-demand software, or ASPs (application service providers).

Perhaps the most common consumer-based online service is email—no sane individual would dream of running their own mail server when Web-based accounts are free, reliable, and full-featured. Likewise, a burgeoning industry has emerged providing email services to business. Yet many IT managers aren't ready to take the plunge and completely outsource such a critical application. However, building a highly reliable, scalable email infrastructure that can meet ever-increasing usage is expensive.

"Traditional methods carry heavy facility, hardware, software, and personnel requirements, and the capital and operating expenditures can be significant," write Forrester Research analysts Stephanie Balaouras and Christopher Voce in a recent report. They note that making a total commitment to the cloud isn't the only option. "You could solve the entire message continuity and recovery challenge by simply hosting your messaging infrastructure in the cloud, but if you currently have and plan to continue to have a premise-based deployment of your messaging infrastructure, cloud services for message continuity and recovery can address some of the core challenges of doing it yourself—a hybrid solution." Nick Mehta, CEO of LiveOffice (www.liveoffice.com) believes that, "Using the cloud as a backup or archive is a great way to test out the concept even if you don't want to move all your email there."

Basic Architecture & Topology Of "Hybrid" Approach

In the hybrid architecture, IT still operates an internal, enterprise email system, such as Exchange or Domino, but replicates all email traffic to a service provider. "It's like having a second copy of the data online," says Mehta. Should a company's internal systems fail, the service provider can take over as the primary MTA (message transfer agent), storing and queuing all in- and outbound traffic. Once internal systems are back online, the cloud service's queued messages are forwarded for redelivery.

Message backup and archiving are the core features most users look for with email cloud services, with some vendors stopping

> "If you currently have and plan to continue to have a premise-based deployment of your messaging infrastructure, cloud services for message continuity and recovery can address some of the core challenges of doing it yourself—a hybrid solution."
>
> *- Nick Mehta, CEO of LiveOffice*

Key Points

- Many enterprises have substantial investment in email systems and are unwilling or uneasy with outsourcing all of it to an online service provider. For these, a hybrid approach, using the cloud for backup/archiving, redundancy, and disaster recovery makes sense.
- While message archiving is the fundamental and popular purpose of cloud email services, optional capabilities include information management, e-discovery, message filtering, business continuity, and disaster recovery.
- Pricing for cloud services is subscription-based with rates tied to the number of mailboxes, total storage consumed, or both.

background research to ensure pricing demands are reasonable. Harris advises using some empathy to see the situation from the vendor's perspective: Understand their motivations and always be tough, but respectful.

Another popular technique is playing good cop/bad cop, where one member of the negotiating team is sympathetic with the vendor and another hostile and unyielding, pressing for the most favorable terms. Also, customers may escalate pricing disputes to the vendor's sales executives, going high enough in the management chain to reach someone with the authority to make substantial concessions.

Both Harris and Woyzbun say a subtle, but often successful, technique is timing the negotiations to coincide with a vendor's fiscal quarter, when the vendor is often more eager to meet sales quotas.

Pitfalls & Landmines

All experts agree that when haggling, it's imperative to negotiate from a position of intelligence: Understand the vendor's competitive pricing environment, its margins, and room for discounts. It's unrealistic to expect the absolute rock-bottom price, according to Woyzbun. Instead, shoot for the lower quartile of a product's pricing distribution. He cautions against pushing discounts too far, noting that making unrealistic, "absolutely ludicrous" demands can cause a vendor to believe you're not serious and walk away from the deal.

Haggling is seldom pleasant, but it's often necessary to gain the most for your IT dollar. Christopher advises not being shy about discount demands, but to not cross the line where you're jeopardizing a business relationship. "Everything's fair game, so press as hard as you can," he says, but maintain your ethics. The rewards can be great, whether it's a 10% hardware discount or many times that on a dubious software maintenance contract. It pays to drive a hard bargain.

10 Steps To Winning A Negotiation

Prior to the negotiation:

- **Research and prepare.** List goals and objectives, research pricing and alternatives, and plan some concessions to an original proposal.
- Determine a BATNA (best alternative to a negotiated agreement) and a "walk-away position."
- **Create an agenda.** Make a list of problems that must be resolved and work collaboratively to try to solve them.

During the Negotiation:

- **Ask for more than you expect to get.** Start with an MPP (maximum plausible position)—the amount a person can ask for and still appear credible.
- **Distinguish between interests and positions.** Opposing parties will take positions that are symbolic representations of underlying interests. Asking questions such as, "What is motivating you here?" or "What would you like to accomplish?" will help identify compatible interests.
- **Develop options.** Before evaluating a certain position, spend some time developing multiple solutions.
- **Avoid getting caught in mental traps.** There are many mental shortcuts that are used to make complex decisions, such as negotiating to maintain the status quo, worrying about sunk costs, or making overconfident or overcautious predictions.
- **Manage concessions.** Aim for solutions that minimize the number of compromises being made by focusing on solutions in which both parties benefit.
- **Think long-term.** An agreement reached grudgingly will be honored grudgingly and will likely be met with problems down the road. If negotiation is treated like a competition, long-term gains are unlikely.
- **Summarize agreed-upon points and action items.** Do this before concluding a negotiation session. Put them in writing and plan follow-ups for action items with deadlines.

SOURCE: "SAVE BOTTOM LINE DOLLARS WITH SUCCESSFUL NEGOTIATIONS"; INFO-TECH RESEARCH REPORT; OCT. 16, 2007.

right there. Mehta actually sees four distinct applications for auxiliary, cloud-based email services: data retention, message search or e-discovery, personal message backup, and business continuity. With more companies subject to regulatory requirements or potential litigation necessitating access to past email, automated archiving and discovery have become important requirements for internal email services.

Likewise, most people are email packrats, but the cost of storage systems and management are nontrivial, particularly for SMEs. "Storage may be cheap," says Paul Banco, CEO of MXSense (mxsense.com), "but you're always going to need to buy more." So, many companies just move the storage management problem to a service provider; for example, Mehta sees many customers offloading all but the past 30 to 90 days of mail to a service provider.

Mehta and Banco both say SMEs are a core customer group for cloud email services, with Banco seeing particular interest from businesses facing compliance requirements and the resultant need for significant storage capacity.

Cost Drivers & Trade-Offs

Rates for cloud email services are typically a monthly subscription based on the number of archived mailboxes and/or the total storage footprint. According to Balaouras and Voce, "The cost per mailbox depends on how many services you subscribe to. Do you want simple continuity of service? Data recovery? Archiving? Emergency communication? Each additional service adds to the cost per mailbox. Pricing can range anywhere from $5 to $10 per mailbox and $3.50 to $6 per GB of storage."

Selection Criteria & Recommendations

When evaluating cloud email providers, the Forrester analysts advise looking beyond mere cost calculations to consider a vendor's infrastructure resiliency, security technologies, and administrative controls. They add, "Beyond ensuring that your data will be encrypted in flight and at rest, you should also ask your service provider if it has a SAS 70 Type II certification as well as certifications for ISO standards, such as ISO 27001/27002, that spell out specific auditing requirements for hosting and securing customer information." Aside from standard SLAs, Mehta also encourages customers to ensure they maintain ownership and control over their data—what he terms "a client bill of rights."

Cloud customers can also save money by not over-specifying service levels and avoiding lumping users into a one-size-fits-all solution. Balaouras and Voce note that the difference between guaranteed 100% availability and living with the occasional short outage could mean thousands of dollars. Likewise, they say "take a hard look at the recovery requirements for different segments of your user population; it's likely that large groups of users might need continuity of service but don't necessarily require access to their historical emails—and there could be opportunity to cut down on cost."

The cloud may be over-hyped, but cloud services are rapidly evolving and are particularly appropriate for mature, standard services such as data backup and email continuity. Aside from the convenience of almost instant deployment and access to advanced capabilities beyond the reach of many SMEs, cloud services can make financial sense by obviating the need for large capital expenditures and additional IT staff.

Critical Selection Criteria & Considerations

Aside from the service cost and features, there are other functional considerations potential cloud customers must think about:

- Are there different service levels for different users or accounts?
- Is the service designed for disaster recovery/continuity or data protection and archiving?
- Are there services to protect mobile email or other apps?
- How automated is the failover process?
- How do you recover messages sent and received during failure?
- Does the service mesh with other disaster recovery/resiliency technologies and procedures?
- Does the vendor meet local laws and regulations and comply with standards such as SAS 70 v2?
- Does the vendor offer messaging services such as filtering and e-discovery?

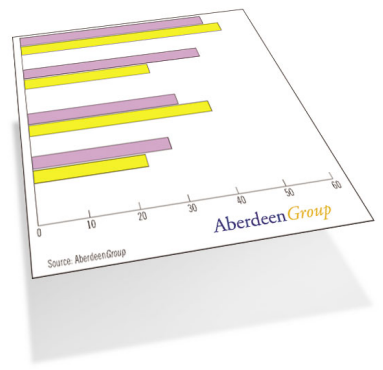
SOURCE: "PROTECTING EMAIL WITH THE CLOUD: HOW CLOUD SERVICES CAN PLAY A ROLE IN MESSAGE CONTINUITY AND RECOVERY"; FORRESTER RESEARCH REPORT BY STEPHANIE BALAOURAS AND CHRISTOPHER VOCE WITH SIMON YATES AND ALEX CRUMB; JUNE 2009.

News

End-User Application Management Key To Success

Does your enterprise need to get a better picture of how its infrastructure supports the business? Start managing your applications from the end user's perspective. That's among the key findings in a report released by analyst firm Aberdeen Group.

The report, "Monitoring the End-User Experience: Improving Business Performance through Application Management," which was sponsored by ManageEngine, collected responses from 125 organizations and found that best-in-class companies (or those that



performed in the top 20%) were able to proactively identify application failures 82% of the time, compared to 36% for other organizations. Additionally, the best-in-class organizations had 99.4% average application availability, compared to 83.7% for those enterprises classified as "laggards" (the bottom 30% of organizations). Best-in-class companies were also more than twice as likely to boost their brand reputation, and they were 75% more likely to better employee productivity than the other companies in the survey.

The report recommends that companies aiming for best-in-class performance focus on obtaining internal monitoring capabilities and systems infrastructure, align application sessions and transactions with business processes, and monitor the end-user experience on a real-time basis.

Base-Level Monitoring

"The laggards are pretty well behind in enabling the organization's capability to perform effective base-level monitoring of their environment. So monitoring is key. And visibility of the end-user experience is key," says Jeffrey DeBarros, a senior research analyst at Aberdeen Group. "Companies need to spend more time in developing and deploying."

The report also recommends organizations consider a holistic performance-based analysis of applications. Only 45% of laggard companies have the ability to monitor applications internally, while 65% of the companies in the industry average have that ability.

According to Hyoun Park, a research analyst from Aberdeen Group, the application landscape has become more complicated with cloud computing, virtualization, and more Web applications, so monitoring the end-user experience has also become more difficult.

"Companies seeking to maintain their ability to understand the end user need to really have control over both their holistic network visibility as well as application performance," Park says. "Take into account that this may mean having to monitor the external world, rather than simply staying within their own enterprise network and internal capabilities that have traditionally defined the enterprise."

by Tessa Warner Breneman

PHYSICAL INFRASTRUCTURE

Ensure The Quality Of Air In Data Centers

Be Aware Of Contamination, Corrosion & Humidity Issues

by William Van Winkle

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"PARTICULATE AND GASEOUS Contamination in Datacom Environments" may not rival Harry Potter on the bookshelves, but this new 104-page softcover is the eighth in a series put out by ASHRAE (American Society of Heating, Refrigerating, and Air-Conditioning Engineers) Technical Committee 9.9. When it comes to the effects of dust, gas, temperature, and humidity on data centers, this is the industry's go-to resource.

ASHRAE's book comes at a time when many enterprises are looking to save energy through "air economizers," meaning systems that pull in presumably cooler outside air, rather than leaning entirely on HVAC systems for air conditioning, and then vent the hot air back outside. Of course, with outside air potentially comes increased levels of gas, dust, and humidity. The question is whether this risk can actually translate into increased failure rates.

"With the book, we weren't trying to say there's a risk at every single data center, but we have to be careful," says Don Beaty, president of DLB Associates (www.dlbassociates.com) and chairperson of the TC 9.9. "There are situations where, by having air come in from the outside for cooling, you could be causing problems down at the processor or board level. There are definitely cases out there where failures have been caused by gaseous contaminants and particulates in data centers. It is not a theoretical condition."

Change Arrives

For many years, the industry has focused on 68 degrees Fahrenheit being the ideal for data centers, but new research by Intel and others is challenging old assumptions.

"Honestly, speaking as a seasoned IT person, we keep data centers cold because that's how it's always been done," says Intel regional data center manager Don Atwood. "We would overcool data centers because we lacked good air management. If our target was 70 degrees everywhere, we'd have hot spots that were 80 and 85, so we'd shoot for 60 degrees to get the hot spots down to 78."

Clever but costly solutions, such as row containment, have evolved to try and increase cooling efficiency, but these don't address underlying assumptions about necessary server environments. In August 2008, Atwood and others at Intel published a paper titled "Reducing Data Center Cost with an Air Economizer." At an Intel data center in Rio Rancho, N.M., the group split 900 identical blade servers into two groups, running 450 under traditional data center environmental conditions (relying heavily on internally contained hot air circulation) and the other 450 simply using air economizers to bring in outside air of up to 90 F. In the latter group, only minimal household-class filtration was used, and no humidity controls were applied. If the incoming air exceeded 90 F, enough air conditioning was applied to bring the temperature back down to 90 F.

Atwood ran the test for 10 months, forbidding cleaning crews to touch the area. Humidity ranged from 4% to over 90%, sometimes with very rapid swings. The upshot was that Intel "observed no consistent increase in server failure rates as a result of the greater variation in temperature and humidity and the decrease in air quality."

Ten months is hardly a complete life cycle, though. Could analysis determine the level of corrosion present on the proof-of-concept machines and extrapolate early failure times?

"I sent three each of the traditionally maintained and proof-of-concept systems, as well as three identical servers from our main data center, to the senior engineer who specializes in corrosion for IBM and asked him to do a blind study on the corrosiveness of being exposed to outside air—the dry, the wet, the dust," says Atwood. "We told them to do whatever was necessary to analyze the solder joints and whatnot to see how bad we screwed these machines up. IBM basically came back and said, from a corrosion standpoint, they didn't know which one was which. They couldn't identify anything that would shorten the life of the servers."

On top of requiring far less environmental control equipment, Intel showed that its air economizer approach dropped the energy consumption required for cooling by 74%. Applied to a 10-megawatt data center, this represents an annual energy cost savings of roughly $2.87 million. The findings were instrumental in influencing ASHRAE's specification expansion from 68 to 77 F to the 64.4 to 80.6 F updated in the new book.

Enthusiastic as Atwood is about his findings, he cautions that further study on the effects of ocean proximity need to be tested, and it's clear that air economizers are not appropriate in highly polluted areas, such as next to a hotel with fireplaces in every room or near a coal-burning plant. He also urges data center managers not to push ASHRAE's new specs too far without proper controls.

Real-World Wisdom

Peter Sacco, founder and president of PTS Data Center Solutions (www.pts-dcs.com), has specialized in data center design for the last 12 years. When advising clients on how to prioritize their air dynamics, he ranks air temperature, humidity, and contaminant control in that order, so it's telling that he calls humidity "a very overstated concern."

"I have a tendency to want to design data center rooms to the upper limits of what the ASHRAE constraints are," notes Sacco. "With my international experience, I've seen data centers with unbelievable temperature and humidity swings and extremes, and still they experience minimal failure rates. The data center industry has lived under fear, uncertainty, and doubt for so long it's time for a dose of reality. The IT equipment today is far more resilient than it was even five years ago."

That said, Sacco still urges filtration for data centers using air economizers, even though the additional air friction caused by filtration takes its own toll on energy efficiency. There's a fine line between advisable protection and over-filtration, and even heavy-handed filtration can't compensate for some occurrences. Sacco notes having seen even large data centers shut down because of smoke from nearby forest fires.

Key Points

- A new book from ASHRAE, "Particulate and Gaseous Contamination in Datacom Environments," offers an updated set of air-conditioning specs for data centers, expanding the recommended temperature range up to more than 80 degrees Fahrenheit.
- Recent research from Intel illustrates how conventional assumptions about data center temperature, humidity, and particle filtration may be significantly and wastefully overcautious for modern systems.
- Data centers can realize cost savings on air control through several means—everything from adopting air economizers to implementing old-school methods of minimizing particle access into computer rooms.

Although Sacco might tend to push the ASHRAE limits, not everyone is ready to dismantle tradition. Paul Jacobson, principal of data center design firm Reliable Resources (www.relres.com), notes that "the new ideas being expressed by ASHRAE are not catching on as quickly with our clients as you might expect. There's a reluctance to be on the bleeding edge. People want to wait and see what time will tell."

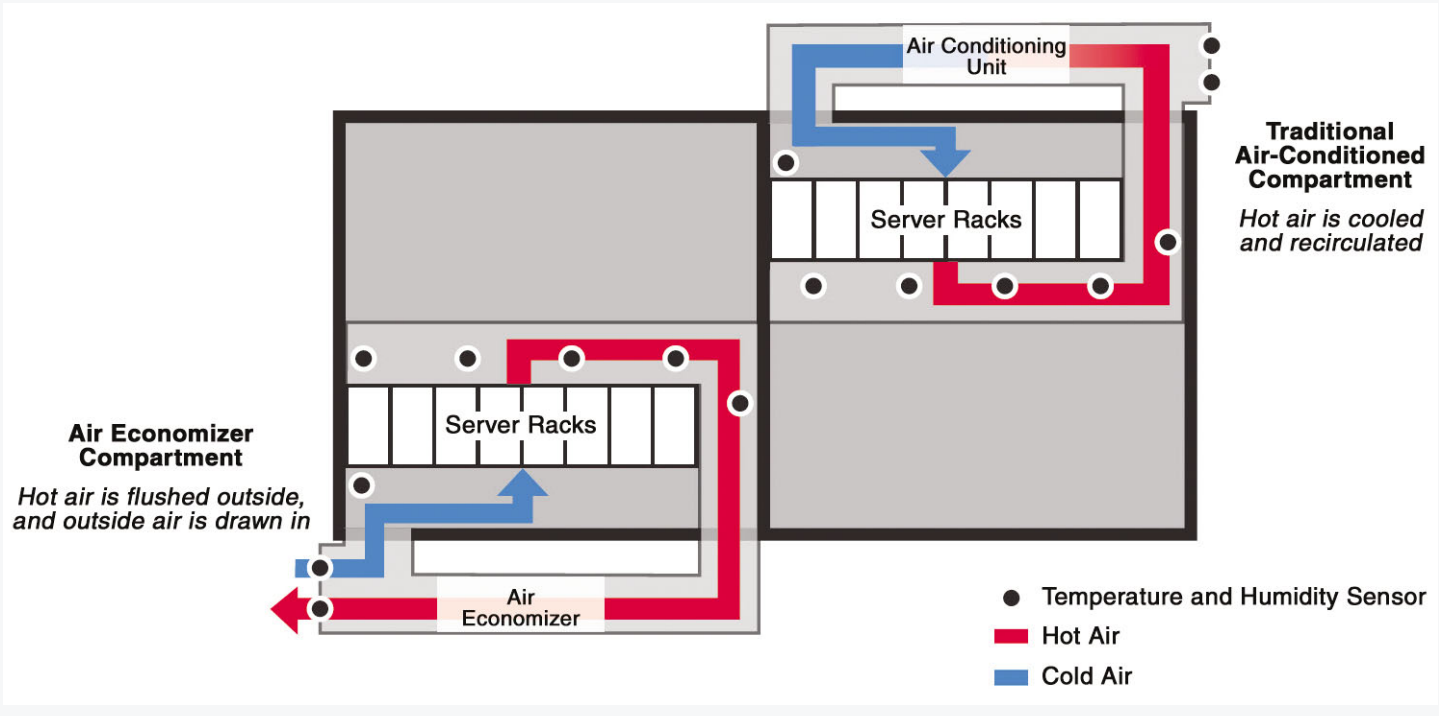
Jacobson sometimes observes that managers will want to keep data centers colder in order to buy more runtime in case of a cooling system outage. However, this ignores that if backup systems don't kick in almost immediately, operations are merely counting minutes.

When it comes to finding more affordable means to control particle contamination, Jacobson advises data centers to "go back to the basics." Because people carry contaminants, human access should be limited to a bare minimum. Sticky mats at the doors can help reduce particles coming in on shoes. Paper and printers in the data center are notorious particle polluters, and cleaning companies should be trained on what can and can't be touched.

"At a minimum, use ASHRAE 30% filters to the room and 65% and higher for outdoor," Jacobsen says. "Positively pressurize the data center to keep particles out. A lot of this is common sense, but also consider what your efforts are buying. If contaminants are reducing the life of the equipment, are we reducing it from 12 years to 10 when many companies are on a five- to seven-year cycle anyway?" P

Intel's Proof-Of-Concept Data Center

With conventional data center cooling, hot air emerges from the back of server racks, flows into the room, gets sucked up into the self-contained air-conditioning system, and then is returned to the room as cool air. In Intel's proof-of-concept data center, cool air is blown in from the outside, while hot air is exhausted to the outside, with no air conditioning involved. Intel showed that this "air economizer" model can save considerable amounts of power while also demonstrating that traditional levels of contaminant and humidity control may not be needed in many data center environments.



SOURCE: "REDUCING DATA CENTER COST WITH AN AIR ECONOMIZER"; INTEL; AUGUST 2008

SERVERS & STORAGE

Hosting Providers

Uptime & Other Issues To Consider

by William Van Winkle

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NOTHING IS PERFECT. Much as we like to tout the robust hardware and rampant failover measures implemented in data centers, systems go down occasionally. That's why the industry measures reliability in "nines" rather than making absurd claims of 100% uptime. Outages happen, so instead, the questions should be what are reasonable uptime expectations when approaching a hosting provider, and how much slack should you give a provider before shopping around for a replacement?

Consider Costs

No one disputes that virtualization is a terrific enabler of cost savings and infrastructure flexibility. When a data center can realize 10:1 resource savings by consolidating systems with virtualization, it would be foolhardy not to pursue this. However, the advantages of cost savings, some of which will be passed on to customers by hosting providers, must be weighed against risks made to uptime assurance. Depending on how consolidation has been implemented, this could mean less hardware available to rely on in the event of failure.

"You get what you pay for to a certain extent," says Bob Laliberte, analyst with the Enterprise Strategy Group (www.enterprisestrategygroup.com). "A lot of the hosted providers, cloud providers in particular, are leveraging these fully shared technologies that have very low cost . . . I don't know if you can expect that same level of availability [as] you might from a more hardened data center. It's really about how much money you want to spend to make sure you won't have an outage."

Data centers that want to have an application hosted and highly available should ask about higher-cost options. Will the hosted application be clustered with other servers, so that if there's a single server failure, it will roll over to another server? If there's a fault at the rack level, does redundancy extend to multiple racks? What about if the entire data center fails? All of these provisions can be handled and virtualization can make handling them more economical, but there remains a difference between virtualizing to consolidate and consolidating while taking the extra expense to ensure failover and high availability. A value-priced provider is more likely to have cut corners. One can't expect 24/7 uptime while paying for tape-based restore systems.

Key Points

- Don't expect nines when paying for eights. The amount of uptime a hosting provider will deliver will likely be related to the amount you pay for its services.
- An SLA doesn't guarantee service performance. Due diligence will do a better job of confirming that a provider can deliver on its promises.
- How a provider interacts with customers in the face of uptime issues may ultimately be the truest test of whether that provider should remain a partner.

Inside The SLA

Tied to every set of uptime expectations is a provider's SLA (service-level agreement), an agreement between a provider and customer about an expected set of services and guarantees. An SLA doesn't necessarily obligate a provider to do anything if the level of agreed service fails to be met. These are usually not contracts providing for set compensation in the event of a breach; rather, SLAs merely seek to establish an agreed set of expectations.

"When you go in to work with a provider, you have to find out what their service levels actually are," says Enterprise Strategy Group's Laliberte. "With cloud providers, most SLAs revolve around responding to questions, not actual uptime.

Larry Beck, senior director of cloud strategy at Avanade, suggests enterprises start setting hosting expectations based on the uptime goals and policies they maintain internally. "A lot of companies are looking for real high-level SLAs," says Beck, "and then when you go back and look internally, they don't necessarily try to maintain those. They're concerned because they're taking a risk in putting these applications outside their walls, so a lot of customers create these artificially high barriers. It's more appropriate to create very realistic understandings and expectations toward having a partnership with the provider."

Also realize that a hosting provider is a business like any other, and some might be prone to stretching reality in order to make a sale. An SLA might promise the moon and all manner of Tier 1 capabilities, but what proof do you have that the provider can deliver on these items? How often are people double-checking that failsafe sensors are operational? A front-line sales rep may not be trained with the depth needed to answer such questions.

"I would insist on talking to an operations manager who will be my ongoing account manager as a service provision," says Russ Conwath, senior research analyst at Info-Tech Research Group. "And I'd ask this manager how will I be informed if there's been some kind of data center issue, if there is one, and what his process for mitigating downtime [is]."

It's easy to make uptime the focal point of an SLA discussion, but fellow Info-Tech research analyst Melanie Davy urges enterprise managers to look at criteria spanning a provider's entire operations, including basic management technologies and customer engagement practices. For example, when a problem develops on the provider's side should the customer be notified and, if so, when? Does the customer have any input on when and how failover actions happen?

"When you have all the information in hand and can develop SLAs from that, you won't run into as many problems," says Davy. "But if you don't have those best practices, you don't have much. An SLA isn't significant enough to make up for the true cost of an incident."

'Til Outages Do Us Part

Sometimes, it's easy to forget that hosting providers are still a largely untried group. This is part of the hosting risk. Early adopters get the potential savings and competitive advantages hosting can bestow, but they also stand on shakier ground. Understanding this, enterprises need to be honest and assess their own patience level for when problems occur.

"If you've quantified what you need, not what you hope, and put that into a contract with your provider, and then you've had repeated problems, then yeah—it may be time to find an alternative provider," says Avanade's Beck. "Over the next year, with all of these providers becoming operational, you're going to see a lot of discussion about what is the level of consistency you should see and the vendor's ability to deliver on the SLA."

Also consider the difference between an annoyance and a critical disruption. If an organization loses email access for 15 minutes, that's one thing, but a four-hour ERP (enterprise resource planning) platform outage could be devastating. This is why many advisors caution enterprises to keep their most critical applications on-premise for now.

"It's about frequency," says Enterprise Strategy Group's Laliberte. "If a provider goes down repeatedly, that's probably your sign to be looking somewhere else."

Perhaps the best metric of all is cost. If the cost of downtime can be quantified, it becomes easier to see if the hosted solution is actually worth its price.

Info-Tech's Conwath points out that a hosting provider relationship is in some ways like a marriage. "The relationship and how things work when stuff goes wrong is equally, if not more, important than the relationship when everything is going right," he says. "There's got to be trust, communication—all those things."

If a provider is honest, acknowledges mistakes, and takes proactive steps to fix issues while keeping customers informed about developments, that makes a pretty solid case for standing by your partner. But if problems persist and repeat, or if a provider keeps customers in the dark and shuns open communication about concerns, then it may be time to pack up and go. P

Extra Tips On SLAs

According to Info-Tech research analyst Melanie Davy, the key to making an effective SLA with a hosting provider is not to rely on penalties to ensure performance. Rather, it is communication between parties and how a situation is handled at the end of the day that makes a difference. Penalties are basically a way of letting the provider off the hook— if something happens, they simply pay the fine and go on.

- Have the vendor outline in detail the steps they will take to recover from a failure.
- Make communication key. Put a communication plan in the SLA that outlines timelines, responsibilities, contacts, and involvement.
- Be realistic. Don't put items in the SLA that are not reasonable or can't be measured and monitored.
- Identify one point of contact. Assign the relationship to one person in your department to oversee the SLA and manage the relationship with the provider.
- Audit the SLA. Periodically review the SLA to ensure that performance levels and expectations are being met.

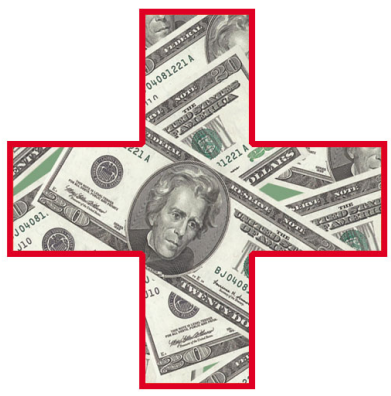
News

Small Enterprises Vulnerable To Cybercriminals

According to an alert released by NACHA—The Electronics Payment Association, cybercrooks are stealing banking usernames and passwords to target small to medium-sized enterprises. The NACHA alert says gangs of cybercriminals are originating in Eastern Europe and transferring funds to accounts from the United States. Attackers are deceiving enterprises by getting employees to log on to fake financial institution sites and then stealing credentials via keystroke loggers or other malware. Some of the hackers' tools can use a victim's browser to make fraudulent transactions.

Microsoft Confirms Windows 7 Product Activation Details

Microsoft confirmed that Windows 7 will be able to be used for up to 120 days without activation by using the same –rearm command prompt that let users extend the grace period in Windows Vista. This allows enterprises to lengthen the time they can use the OS without entering a product activation key. If users enter slmgr –rearm in the command prompt at the end of the first 30 days, they'll get a second 30-day period. The –rearm command can be used up to three times, for a total of 120 days.



Hospitals To Receive $1.2 Billion For EMRs

The U.S. government will allocate $1.2 billion in grants to help hospitals and healthcare providers switch to electronic medical records. Vice President Joe Biden and Health and Human Services Secretary Kathleen Sebelius made the announcement during a visit to a Chicago hospital last month. The grants are part of the $787 billion federal stimulus program that Congress passed in February. $598 million will be used to establish about 70 health information technology regional centers, which will help hospitals and clinics with technical aspects of electronic medical records systems. Another $564 million will go to states to help patients share medical information within a nationwide network.

Gartner Raises Chip Revenue Forecast

Gartner says better-than-expected performance in the semiconductor market means semiconductor revenue will only drop 17% year-over-year, as opposed to the 22.4% decline it had expected. The research firm expects worldwide semiconductor revenues to reach $212 billion this year, compared to $255 billion last year. Several semiconductor vendors, including Intel and Samsung, reported revenue growth during the second quarter, Gartner notes. Gartner expects semiconductor sales to be on the upswing again next year; it projects a 10.3% increase next year, cautiously noting, however, that this year's fourth quarter and the first quarter of next year will be extremely important in determining what actually happens.

News

Cutting Mobile Voice & Data Costs

In the current economic climate, many enterprises have had to perfect the art of belt-tightening just to survive. But new research from analyst firm Gartner shows that most enterprises aren't turning a cost-cutting critical eye toward managing mobile voice and data costs. The study found that about 80% of enterprises with 500 employees or more are failing to take advantage of their current mobile service contracts. Gartner expects these firms to spend an average of 15% more than they need to on wireless services through 2014. In the same timeframe, Gartner predicts that the average cost per use for wireless voice services will drop by just under 2%.

Streamline Mobile Costs

According to Gartner analyst Phillip Redman, enterprises can better manage wireless costs by closely assessing current contracts, reining in expensive international roaming, better managing mobility, and replacing redundant desktops and desk phones for appropriate workers. Regarding roaming charges alone, Gartner expects that a small

percentage (10%) of a firm's international travelers can be responsible for as much as 35% of the total service costs through 2010. Gartner also estimates that 40% of enterprise knowledge workers will have stopped using their desk phones by the end of 2013.

Gartner recommends enterprises inspect such things as the average minutes of use, average cost per user, total enterprise minutes above plan, and total enterprise minutes below plan to discover new money-saving opportunities. Another tactic that can help the corporate bottom line is to determine which users are best suited to which services instead of offering the same service plan to all mobile employees.

Redman says that smaller firms would likely not suffer from wireless services overspending to the same degree as larger enterprises, but "small businesses may not be taking advantage of some deals that they can get as carriers are getting better at addressing their needs." Other cost-cutting maneuvers included in Gartner's report entail taking advantage of corporate discounting offered by most carriers, advising international travelers to avoid calling while roaming, and investing in new mobile unified communications and voice over WLAN technologies.

by Andrew Leibman

PHYSICAL INFRASTRUCTURE

Ready For Regulation?

Data Center Energy Use Will Likely Be Part Of Coming Federal Requirements

by Jean Thilmany

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Enterprise data center managers must be up to speed on how climate policy legislation—notably the Waxman-Markey energy cap-and-trade bill now moving through Congress—will affect them so they can be ready with needed changes and adjustments.

"Data center managers might not understand that once the legislation passes, in whichever form, they'll be a significant contributor to carbon emissions and will fall under reporting requirements," says Mike Manos, senior vice president of technical services at Digital Realty Trust, a data center solution and consulting firm (www.digitalrealtytrust.com). "I don't think many data center managers see that coming or are aware of that."

Where Things Stand

The first step—staying on top of legislative changes coming down the pike—can seem overwhelming. But it needn't be, Manos says. Though many of the rules and regulations now on the table might not appear in a final bill, managers can get a nice overview of where things stand by following the bill's progress, he says.

He recommends those interested check out www.govtrack.us or other federal sources that summarize the contents of emerging bills. Be aware, however, that the final contents of a bill won't be known until it passes both houses of Congress. And of course the president must sign off on it before it becomes law.

"It's a wait-and-see game. But for right now, you're just trying to understand where those laws will fall," Manos says.

The Green Grid (www.thegreengrid.org) is also a good resource for following pending legislation, says Steve Buckus, vice president of operations recovery services at SunGard Availability Services (www.availability.sungard.com). The Green Grid is a consortium of IT companies looking to improve energy efficiency in data centers. As such, the organization is good about keeping members up-to-date on how energy regulation might affect them, Buckus says.

He also recommends checking the Web sites of leading hardware manufacturers. Because their products are used in data centers, these companies have an interest in ensuring their users and their products will be ready for energy regulation. Although each manufacturer's site might be slanted toward its own products and services, the sites are still useful, Buckus says.

Ready To Roll

"We all have a responsibility to follow the legislation so we're not behind the 8-ball," Buckus says.

To make sure your data center stays up to speed, forge a direct relationship with your facilities manager, if you don't already have such a relationship, Manos says. Meeting reporting, reduction, or energy usage requirements will necessitate a close working relationship on a data center and facilities front.

"Most organizations have the IT department and then the facilities or real estate group that looks at a building's energy consumption," he says. "Rarely across the country do you find roles that aggregate both of those departments.

Key Points

- Federal climate-change legislation will almost certainly pertain to data center operations.
- Those caught unaware by new laws could pay the price either through energy-use taxes or by paying higher costs than necessary for energy monitoring equipment.
- You can keep appraised of potential climate-change laws by following their progress through various Web sites.

"But when these initiatives pass, you'll find yourself in a situation where you're not structured for reporting or efficiency because facilities doesn't get what you can do from a technology point to optimize the data center, and the data center managers don't see power bills to understand where they'll have to go to meet their energy use targets," he adds.

Once a climate-change law passes, managers will likely find themselves needing to report their energy usage within a specified time frame, Manos says. This will necessitate tracking use, which managers can do now.

Tracking use means bringing monitoring equipment on board if it's not already in place at your data center. The monitoring equipment needn't be fancy or expensive. It can be as simple as branch circuit monitoring technology or IP-addressable power strips that let you read IP electrical load, Manos says.

He also advocates a sneakernet. "Someone could read the power readings every day at the same time as part of their rounds," he says. "There's no technology involved, but it takes strict observation and rigor to make sure people are collecting data and consolidating it in one place so it can be reported upon."

These reports give managers a place to look when reporting usage and determining baseline energy use against efficiency improvements that can be measured, he says. Managers should ensure their data center runs as efficiently as possible to cut energy costs and avoid paying possible carbon taxes that legislation could bring, Manos says.

Different States

If you operate many data centers across the United States or worldwide, you'll have to plan a way to aggregate carbon reporting, Manos says. Different states may tax energy usage above and beyond what the federal government will call for. And of course different countries have varied carbon-use laws in place. For now, be aware of the potential for different taxation rates and ensure CIOs and other executives are aware of the possibility, he says.

> "If you wait too long to start putting in things like basic measurement technology, you might find yourself spending a lot of money because people savvy enough to install the technology will be a scarce resource."
>
> *-Digital Realty Trust's Mike Manos*

Managers should know that legislation might drive up the cost of electricity, particularly in areas where coal-fired plants provide the electricity, says Howard Shafferman, co-partner in the energy and project finance division at the law firm Ballard Spahr. Data centers may want to begin shopping now for electricity providers that offer lower rates than they're presently paying, he says.

The most important thing data center managers can do is be aware of and plan for coming regulation, Manos says. "I don't like to draw the specter of Y2K, where everyone was like, 'let's avoid it, oh my gosh it's almost here,' and then spent exorbitant amounts of money preparing themselves," he says. "But if you wait too long to start putting in things like basic measurement technology, you might find yourself spending a lot of money because people savvy enough to install the technology will be a scarce resource." P

Tips For Readying For Regulation

- Begin measuring energy usage now for coming reporting purposes.
- Look to make your data center as energy-efficient as possible to avoid a potential carbon-use tax.
- The least-expensive electricity provider may not be the one you're currently using; shop around.
- Monitor your electrical use at the same time every day and rigorously record use. This will give you a baseline against which to compare energy-efficiency measures.

TIPS & ADVICE

Twitter: Friend Or Foe?

Gauging The Role & Reasonable Limits Of Social Media In The Workplace

by Christian Perry

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As the social media craze moves forward with unparalleled momentum, organizations that have yet to embrace the phenomenon are apt to wonder if they're missing a game-changing boat. But although tools such as Twitter, LinkedIn, and Facebook certainly deliver an opportunity to increase business awareness, they also introduce a potentially overwhelming set of challenges that can leave organizations scrambling to find solutions.

"Social media sites are all the rage today," says Laurent Duperval, president of Duperval Consulting. "We are still in a learning process, trying to figure out how to use these tools as efficaciously as possible. It is similar to what we went through with email and the Internet. At first, access was limited until eventually it was possible to build a business case for the use of such technologies. Then, access was granted to everyone."

Because of their ability to stretch communication to the far-flung reaches of the Internet, Twitter and similar sites boast potential like few other business tools to date. But that same power can unleash a host of security, privacy, and legal downfalls, driving home the importance of approaching the medium with a careful, strategic gait.

Walking The Social Tightrope

Rarely do you hear a colleague say, "We're on Twitter." The social media medium is largely individualistic, with users preferring to interact with individual people rather than corporate brands, explains Patrick Schwerdtfeger, author of "Webify Your Business: Internet Marketing Secrets for the Self-Employed." This presents a challenge for enterprises and is compounded when a corporate brand employs hundreds or thousands of people who regularly discuss their jobs on these social platforms.

"The result is a blurred and often contradictory distinction between official corporate communication and unofficial experiences as expressed by individual people, and it can have a disastrous impact on a company's public image. Although corporate executives will increasingly attempt to regulate their employees' social media activities, the trends pointing against them will inevitably win in the end. The only way for corporations to protect themselves against negative social media commentary is to treat their employees and customers with integrity and respect," Schwerdtfeger says.

According to Bart Lazar, an intellectual property expert and partner in the Chicago office of Seyfarth Shaw, the potential legal liabilities of social networking are extensive, particularly because user-generated content in these media can be hard or even impossible to alter or delete. As such, he recommends that official enterprise spokespeople be trained in social messaging and that other employees be limited—through policies, training, or other methods—to prevent them from claiming to be unofficial or even official enterprise representatives.

Determining where to draw the lines with social media is a tricky proposition, especially as more employees become heavily involved with the sites. Duperval notes that with so many different platforms, monitoring becomes an issue. Do you give access to all the sites or just a few? Do you let users install all applications and add-ons? If employees have Facebook pages, do they need to maintain separate profiles for work and personal life? For example, while Duperval acknowledges the value of a Facebook page for members of a marketing team, he questions the value of other tools.

Power Through Policy

Despite the risk potential, experts are quick to identify social media sites as excellent marketing tools. Social media strategist and speaker Jennifer Lindsay notes that small and midsized enterprises—especially technology companies—can use Twitter and LinkedIn to gain name recognition among key influencers and decision makers in a more effective and measurable way than past methods. SMEs can also harness the tools to showcase deep subject matter expertise.

"This is key on LinkedIn, where the community ranks experts. Not taking advantage of the inherent benefits of this platform could be perceived as weakness by competitors. Risk must always be measured before engaging in any social media programs in the enterprise, but properly executed, the pros should outweigh the cons by far," Lindsay says.

To decrease time wasted on efforts not sanctioned by the company, Lindsay recommends working closely with company counsel and human resources to construct a social media policy that covers the specific needs of the business. She says that human resources must in turn learn to consistently enforce the policy, which should include a clear, but broad, definition of scrutinized sites, including internal and external blogs and wikis and social networking and rich media sites such as LinkedIn, Facebook, Yahoo! Groups, Flickr, Twitter, and YouTube.

Duperval adds that a social media policy depends on the business advantage delivered by the use of social media sites. To determine the business advantage, an organization should identify its goals (What are we trying to achieve with social media? Market? Exposure? Customer service?) and return on investment (If employees are spending two hours each day on social media sites, what gains is the company making?). ROI metrics can be tangible (increased sales, reduced costs) or intangible (better goodwill, better service to customers), he says.

Social Saturation

A small study conducted earlier this year at Sri Lanka's University of Moratuwa drew attention to yet another drawback of social media: network utilization. The study claims that sites such as Facebook not only consume bandwidth but also contribute to an "exponential" increase in DNS traffic as they pull content from across the Internet. Further, to help boost site efficiency, Facebook automatically caches all of the photos in an album, even though the user might not want to view all of the images.

Regardless of whether organizations ultimately feel any network-related effects of social media usage, it remains essential to recognize that employees themselves are both the biggest assets and biggest potential liabilities in the social media realm. "All companies, whether they are engaged formally in social media or not, need to think about how to leverage [their employees] to best expand programs and translate programs from the real world to the online world," Lindsay says.

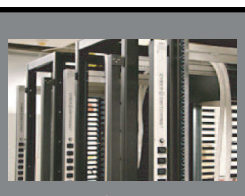
Social Liability Risks

Bart Lazar, an intellectual property expert and partner in the Chicago office of Seyfarth Shaw, identifies the top potential liability issues organizations face when dealing with social networking sites.

- **Intellectual property infringement.** Posting or exchanging infringing content could raise issues of copyright infringement, trademark infringement, or right of publicity.
- **Defamation/trade libel.** False or deceptively misleading statements of fact posted about an individual or company could be the basis for legal action.
- **Trade secret/confidential information.** A simple post could give away a company's valuable information or reveal something that a company intends to do and hurt the company in the marketplace. If you reveal someone else's confidential information, that could also be the basis for legal action.
- **SEC issues.** Misrepresented, false, deceptive, or forward-looking statements could run afoul of SEC regulations.
- **Transparency/hidden spokesperson.** If a person is paid (directly or indirectly) to post information about the company, this should be disclosed.
- **Potential employment issues.** This can include disparate treatment in terms of selective permission/enforcement, wage and hour claims, or harassment in the workplace.
- **Misuse of personal information.** If a company collects personal information from visitors, the same principles of information collection relating to the company's Web site would apply.

Key Points

- Although the popularity of social media is higher than ever, the medium remains in its early stages, causing confusion in terms of risks, management, and policy.
- Because of the individualistic nature of Twitter and similar sites, employees can find themselves becoming the voices of their organizations, even when they're not formally sanctioned to do so.
- Building and enforcing a policy can help organizations control what employees are posting on social media sites to not only avoid risks but also take advantage of marketing and other opportunities.



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CLIENTS & SERVICES

Will Chrome Shine?

Google's Promised OS Offers Potential & Pitfalls

by Bridget Mintz Testa

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Google's announcement of its new Chrome operating system, due to debut in the second half of next year, almost instantly generated controversy and criticism in the technology community. Some industry observers think that Windows 7 will crush the OS. Other observers think some buyers will snap it up because it'll be fast and easy to use, running solely on applications residing on the Web.

If Windows does crush the OS, then enterprise IT and data center managers won't need to worry about it. If consumers adopt it and then bring it to work with them, however, it'll be a very different story. If that does happen, enterprise IT may never be the same.

Operating System & Applications Mash-Up

If you want to know what Google's new operating system will be like to use, "get the Chrome browser and study it," says Daniel Golding, vice president and research director for Tier1 Research, part of The 451 Group. "It's going to be a version of Linux on the desktop with the Google Chrome browser on top."

The OS is targeted at "users who do most of their stuff on the Web," says Michael Silver, research vice president and distinguished analyst at Gartner. "Any type of Web application should run on it."

IDC analyst Al Gillen worries whether the Linux kernel underlying the OS will be standard or heavily customized. "Google can tweak or improve Linux to make it a better client operating system, then re-release it," Gillen wrote in a brief titled "Can Google Go Where No Other Linux Distro Has Gone on the Desktop?" The problem, of course, is that if Google tweaks Linux too much, "does the [Linux] community endorse Google's approach or does the community unite to encourage Google not to fork the base OS?" Gillen writes. "Two Linux kernels are not better than one."

The OS does have the potential for being "a better way to deliver modern [rich-media] applications based on the Web in the cloud," says Tim Hickernell, lead analyst for Info-Tech Research Group. "It will give you everything you need without having to buy someone else's OS. Google is trying to merge the OS and the application layers into one layer and deliver it through the cloud. You'll do everything through the browser."

In Spite Of IT

In Google's release announcing the upcoming OS, the company spoke only of consumers as its target market for the OS, but that doesn't mean enterprises can ignore it. "'Consumerization' of enterprise IT is a growing trend," says Andi Mann, vice president of research at Enterprise Management Associates. "You don't have to deploy [the Google OS] in the data center and you don't have to standardize on it, but you can't prevent end users from adopting it. Like Web-based storage and the iPhone, we're seeing an increasing need to put these devices in the enterprise."

For the average enterprise, Mann says this will be the eighth or ninth OS with which IT will have to wrestle, along with a couple of different versions of Windows, several mobile systems, Linux, Unix, IBM mainframes, and possibly even Apple OS. And then there are the browsers.

"It's not just Chrome, it's all these browsers, because users are increasingly using [them] to run applications," Golding says. "Data center and IT managers shouldn't try to standardize. They must support the equipment and browsers end users decide to use, whether it's iPhone, Explorer, Chrome Netbook, or Firefox. The day when IT managers could standardize for their own convenience is over."

To cope with the plethora of browsers, Golding recommends that IT managers keep track of the browsers their users are using and overall utilization statistics in the larger world. He also recommends keeping up with the Google OS releases.

Mann, however, says enterprises should be wary of relying on Google for sufficient information about the OS. "Chrome OS will probably go into beta for two years," he says.

Applications In The Cloud

If enough end users delight in the fast, lightweight Google OS and its seamless meld with Web applications and demand to employ it at work, enterprise IT and data center managers can expect many long hours accommodating them.

"Organizations that want to use this have a lot of work to do," Silver says. "The main issue is the applications. The whole idea is that the OS moves the applications from operating on desktop computers to the Web. So the applications will have to move to servers, and data center managers will have to manage that." Data center managers will have to look at the number of applications and the number of users running each application and then figure out how to replace all those applications for each user.

The migration cost will depend on the number of applications. And IT and data center managers will have to get heavily involved in selecting, implementing, and maintaining both the applications and the server-based environment where the applications will reside.

Another issue is existing enterprise applications. "More than half of applications require Windows today," Silver says. "When you are considering this OS or any other, you must consider the applications users need and how they can run them without Windows." Whether existing applications can be adapted to the Web-only environment or whether they'll all have to be replaced, Silver says it will be "a ton of work."

Mann agrees. "It will be a nightmare for IT managers," he says. "IT will waste time connecting [Google OS-equipped devices] to the network. It will waste time trying to fix applications that they don't have the tools or skills to do. They will face cost issues because users will want the equipment, and they will face security issues. They will face development issues in re-developing internal applications and customer-facing applications to run on this OS. My advice to enterprise clients is to stay away."

Because users will likely make that impossible, Hickernell advises enterprise IT groups to experiment with Google's new OS, just as they would with any other OS. "Stick with your [existing] OS, but start experimenting with delivering modern applications through other methods, such as Adobe AIR and Microsoft's Silverlight," he says. "You'll need your legacy applications and OS for some time. If you want to go forward with Web 2.0 technology, take small steps, not one big leap." P

Key Points

- Google's new Chrome operating system is intended to merge the browser and applications into one seamless experience.
- Although IT and data center managers may object, end users may force the adoption of the OS into the enterprise.
- To prepare for such adoption, IT and data center managers should keep up with Google releases on the OS and start experimenting now with Web-based application delivery.

Castles In The Clouds

With its new Chrome operating system, Google wants to move everything to the cloud: email, data, and applications. Industry observers expect those applications will be built by third parties. It's like software as a service, which many large businesses are trying out because it promises reduced maintenance, licensing, and other costs. But lower costs have a price.

"Software as a service has greater security risks than local applications," says Tim Hickernell, lead analyst at Info-Tech Research Group. "Each company must assess its risk tolerance for . . . the viability of each third-party application they use, because otherwise they could end up with too many possible points of failure."

If you build an enterprise IT castle in the Google clouds, make sure your third-party software vendors provide it with a firm foundation.

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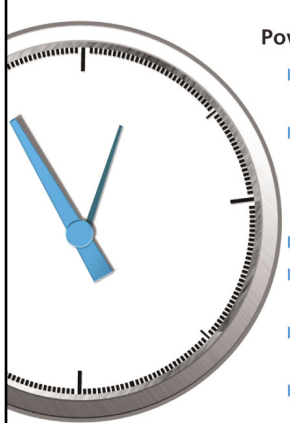

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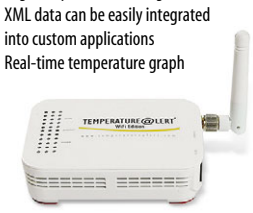

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SIX QUICK TIPS

Choosing An Email Security Solution

Tips For Getting The Most Bang For Your Enterprise's Email Security Buck

by Chris A. MacKinnon

• • •

IF YOUR ENTERPRISE DOES NOT HAVE a reliable email security solution, now might be a good time to consider putting one in place: According to a recent report from McAfee, about 92% of all email is spam. But with today's economy, how do small to midsized enterprises go about selecting the right email security solution at the best price point? Here are some tips to help you select the solution that fits your enterprise.

Think Security & Consolidation

Scott Cressman, email security product manager at Sophos (www.sophos.com), says a holistic security approach is beneficial to enterprises in many ways. "IT security is becoming less of a mishmash of different solutions provided by different vendors," he says. "Choosing a vendor that offers the broad suite of products and understands all of the different attack vectors can provide you with significant cost savings and centralize and standardize management and policy definition in a way that plugs the holes and puts control and visibility of the relevant data where it needs to be."

Keith Crosley, director of market development at Proofpoint (www.proofpoint.com), says functionality must be consolidated at the perimeter. Crosley notes, "IT and data center managers should select a solution that allows them to combine antispam, antivirus, email policy enforcement, data loss prevention, encryption, and other features in a single solution, simplifying your overall infrastructure, reducing the number of vendors, and reducing administration time and costs."

Crosley says that encryption, DLP (data loss prevention), and Web security should also be considered. "TLS (transport layer security) is a must-have," he says, "but more and more organizations also need policy-based encryption. Make sure your vendor can deliver it. Also, an increasing number of organizations are needing DLP features due to rising regulatory issues and best practices for data protection requirements."

Ease Your Implementation Woes

In Cressman's opinion, IT and data center managers should look for a solution that doesn't require a professional services specialist to install, configure, and update the solution. Instead, the solution you choose should provide automatable or transparent updates and provide simple means to implement policy and investigate issues.

Cressman says the infrastructure around email and the gateway is sufficiently standardized, so you shouldn't need to implement custom solutions. "Manage your users and groups through directory services, monitor your systems using SNMP, and offload logs through syslog for data mining with a capable log management tool, if necessary," he says. "You shouldn't need to be reinventing the wheel to provide a high level of email security, and any customizations or unsupported configurations will only cost you money and cause you headaches as team members come and go and expertise in a complex solution is lost."

Cressman adds that support—preferably available 24/7—is an important part of the solution you choose. "No matter how good a solution you purchase, one thing you should never compromise on is support," he says. "A great support team can make all the difference when you need them most. Be sure to test out a vendor's support before purchasing and understand what the SLA details are."

Broaden Your Scope

When choosing a solution, look at providers that specialize in more than one facet of email security. "Try to stay away from single-solution sources," says Toby Penn, senior solutions engineer for Accuvant (www.accuvant.com). "If they only do spam, then you'll be looking to a lot of other vendors to plug the other points of control such as DLP, encryption, etc. This is a human cost issue. If you have one management interface that does multiple things, you have less training required and fewer people needed to manage that solution."

Michelle Dillard, product manager for Sunbelt Software (www.sunbeltsoftware.com), agrees that email security is more than just antispam. She says messaging infrastructures must be hardened against a variety of threats, including phishing scams, viruses, adware, and spyware, all of which impact productivity, cause expensive downtime, or exposure of sensitive company information. However, deploying a separate solution to

BONUS TIPS

- **Focus on connection management.** Select a solution that has the technology both to drop connections based on reputation and to minimize the amount of actual messages that must be processed. This not only saves costs but increases efficiency and effectiveness and guards against spikes and targeted attacks. Look for these features and consider moving them to the cloud if you must deploy an on-premises solution to smooth out traffic spikes and simplify ongoing capacity planning.
- **Be aware that different solutions count messages differently.** One solution may use the message ID (unique number that is tagged to every message), while other solutions may use recipients to calculate their statistics. This can cause widely different numbers to show up. For instance, if a single incoming message is destined for 20 recipients, one solution may count this as one message and another solution may count this as 20 messages.

SIX QUICK TIPS

Optimize Data Center Cooling

Keep Your Cooling In Tip-Top Shape To Help Conserve Energy & Money

by Sixto Ortiz Jr.

• • •

THE SCIENCE OF KEEPING a data center cool is an essential piece of the data center operations puzzle, and until processor technology makes a radical step toward the development of more heat- and energy-efficient designs, the problem of heat generation and dissipation will continue to dog administrators. A poorly cooled data center can become the proverbial anchor around an organization's neck, giving rise to unpredictable, spotty performance and lost revenues and productivity.

Fortunately, there are steps administrators can take to optimize cooling in the data center. Read on to learn how to make the most of your cooling infrastructure.

Measure What You Have

Before any effective changes can be made, administrators must understand what they have to work with. Without that knowledge, there is no way to determine how effective a proposed cooling optimization solution might be and thus the return on investment it is able to deliver.

"If you are not already capturing detailed information on existing conditions and calculating your site's power usage effectiveness (PUE), it is crucial to document conditions such as utility load supporting the data center, IT equipment intake temperatures, UPS load, [and] redundant cooling capacity before implementing any changes," says Lars Strong, an engineer at Upsite Technologies (www.upsitetechnologies.com). This will enable administrators to document improvements and communicate results to upper management, he adds.

"If you can't measure it, it's hard to manage it," says David Brown, president of Datotel (www.datotel.com), a St. Louis-based colocation and outsourcing facility. Brown recommends that administrators either automatically or manually monitor the temperature at various heights in the cabinets. Also, he adds, administrators should ensure that temperature ranges are maintained within predetermined service levels.

Get A Data Center Health Check-Up

If comprehensive monitoring and PUE calculations are not part of data center management practices, says Strong, a computer room cooling efficiency health check can help administrators identify how improvements to the airflow and cooling dynamics of a computer room can reduce operating costs, increase capacity, and defer capital costs.

Strong recommends that a checkup of cooling system effectiveness should involve an examination of three aspects of data center health: the condition of IT equipment air intakes measured in temperature and humidity, the percentage of bypass airflow, and the CCF (cooling capacity factor).

Strong defines the CCF as the margin of installed cooling capacity vs. the load. A number of measurements need to be taken in order to determine the CCF, including the measurement of cabinet air intake temperatures, relative humidity of any identified hot spots, maximum temperature drops across cooling units, and delivered cooling unit airflow volumes. In addition, the delivered cooling capacity of each cooling unit should be calculated and compared to manufacturer specs, the computing equipment power load should be summed up, and instances of latent cooling and latent cooling penalties should be determined. Finally, all return air temperature and relative humidity sensors should be checked for proper calibration.

"These measurements and resulting calculations will provide clear indication of opportunities for improvement," says Strong.

Plug Leaks

Cool air leakage is a significant obstacle to the optimization of data center cooling. Significant leakage results in massive wasted energy and, in extreme cases, could lead to equipment downtime.

Jack Tison, vice president of technology at Panduit (www.panduit.com), points out that a significant amount of cool air can pass through improperly sealed spaces within racks, cabinets, and floor cutouts. This situation disrupts the efficient movement of air, reduces the efficiency of equipment blower fans, and wastes energy used to cool the air.

Tison says administrators can remedy these leaks by placing fillers or blanking panels in empty rack spaces to promote cool airflow through server and switch air intakes. Also, he adds, air-sealing grommets should be used to seal cable cutout spaces under cabinets, eliminating bypass air and increasing the static pressure under the raised floor.

Joe Perillo, vice president of enterprise infrastructure technology operations at MetLife, says his organization uses a multi-pronged approach to ensure efficient airflow in the data center: Server racks are arranged in a hot aisle/cold aisle configuration, with perforated tiles positioned on the cold aisle

BONUS TIPS

- **Avoid cable clutter.** According to Jack Tison, vice president of technology at Panduit (www.panduit.com), cable management best practices such as routing data and power cables toward cabinet side walls away from server exhaust areas and properly placing cable pathways outside the cabinet can reduce clutter and eliminate exhaust area choke points, improving cooling efficiency.
- **Speak to local electric utility companies.** David Brown, president of Datotel (www.datotel.com), says an increasing number of electric utilities offer programs such as free consulting, audits, or economic incentives to help data centers become more efficient and use less power.

protect against each threat type adds to the complexity of the infrastructure, making management more difficult and time-consuming. "To ensure maximum security of the network and enable efficient and streamlined management," she says, "an email security solution must integrate protection against phishing scams, viruses, known malicious URLs, and other forms of malware."

Get SaaS-y With Spam

One method for fighting spam is to employ a software-as-a-service solution. Penn says it's important to ask SaaS vendors about their ability to get to the native mail logs. "Why is this important? One reason is troubleshooting," he says. "On a number of occasions, I have heard of a customer launching a ticket with their SaaS provider and not finding a resolution for three days. Email is a 'now' technology, and three days is an eternity." Penn says having the ability to follow the mail flow and determine if a message reached an organization is crucial.

Crosley says SaaS can also help to minimize costs without sacrificing security. "Osterman Research suggests that, in nearly all cases, the SaaS deployment model offers the lowest total cost of ownership," he says. "For a typical SME, savings are typically 60 to nearly 90% over on-premises deployment models, driven by savings in labor, capital equipment, bandwidth, storage, and other areas."

Best Tip:

Find An EMAIL Solution

Today, organizations are faced with malware-threatened computing environments and frozen or shrinking IT and security budgets. Michelle Dillard, product manager for Sunbelt Software (www.sun-beltsoftware.com), says organizations need to do more with less. To accomplish this, Dillard recommends organizations find a solution that follows the EMAIL model:

E: Easy to install
M: Minimal management resources needed
A: Aggressive spam and virus detection and elimination
I: Integrated antispam, antivirus, and antiphishing technologies in a single solution
L: Low total cost of ownership

Smartest Tip:

Look For Automated Management

No matter what the form factor, a good solution should have automated management or self-healing features. According to Scott Cressman, email security product manager at Sophos (www.sophos.com), "Many appliances, due to their controlled environment, are able to provide self-managed or self-healing features that can identify issues and automatically remediate them with no administrator interaction, proactively contact the vendor's support team, or alert preconfigured contacts. [Automated] services are often aware of issues and can remediate them before you've noticed them yourself. This type of service allows you to concentrate on projects that enable your business, rather than babysitting a solution."

floor and hot aisle ceiling; hot-air removal units are attached to the server racks; and grommets are used to minimize bypass airflow through the floor. Finally, says Perillo, cables are maintained above the raised floor—if the rack configuration allows it—to optimize airflow below the raised floor.

Other places to look for leaks, says Upsite Technologies' Strong, include column façades to adjacent floors, entrance doors and elevators, loading dock doors, windows, overhead wall openings where cables pass through, and holes in the perimeter walls above the dropped ceiling. In addition, all openings in the raised floor that do not deliver conditioned airflow directly to the intakes of IT equipment should be sealed. These include cable openings under or behind cabinets and holes under PDUs or for conduit penetrations.

Take Advantage Of Free Cooling

There is no quicker way to capture energy savings than to use the cooling capabilities that Mother Nature already provides. MetLife's Perillo points out that depending on the location of the data center, administrators may be able to take advantage of "free cooling." For example, says Perillo, MetLife takes advantage of cold winters by using water-side economizers, which use cooling towers to cool water using low outside temperatures.

Given adequate ambient environment, a water-side economizer eliminates the need for cooling with chillers, which is advantageous because chillers are one of the highest energy-consuming devices in a commercial building. Panduit's Tison says air-side economizers can also provide savings by bringing outside cool air in, filtering it, and then expelling waste heat back to the outside.

Easiest Tip:

Keep Up With Preventive Maintenance

David Brown, president of Datotel (www.datotel.com), says preventive maintenance is an obvious area where administrators can capture cooling system optimization gains.

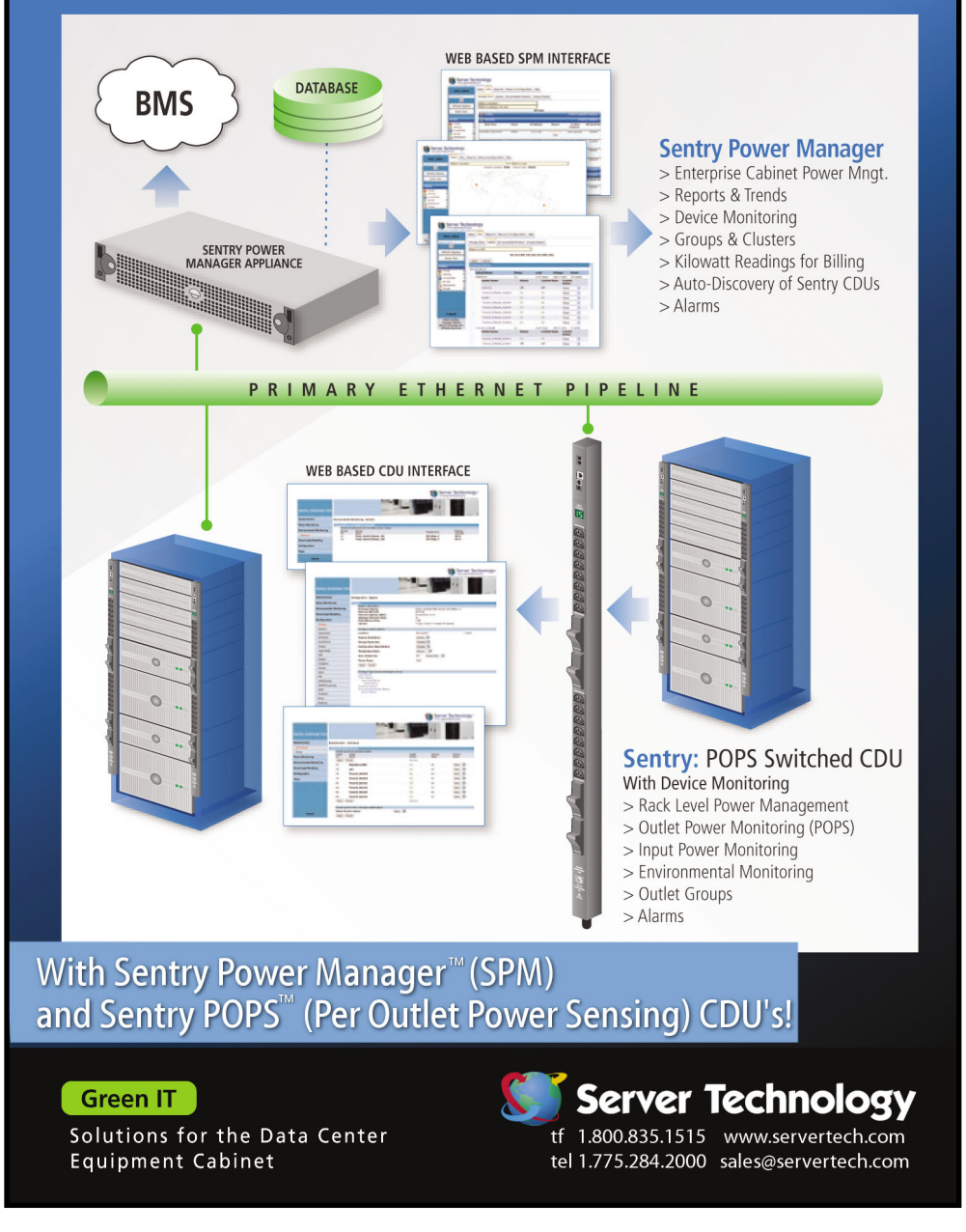
Brown says that poorly maintained equipment not only increases the likelihood of failure in the cooling infrastructure—which can cause heat issues all by itself—but is also more costly to operate and won't run at full cooling capacity. So, he emphasizes, administrators should stay on top of their cooling equipment maintenance.

Best Return On Investment:

Consolidate With Virtualization

At the end of the day, cooling optimization is required in order to keep data center equipment such as servers and networking gear operating most effectively. Therefore, an excellent way to optimize data center cooling is to reduce the number of servers in the data center. In this area, virtualization can help.

Joe Perillo, vice president of enterprise infrastructure technology operations at MetLife, says his company has achieved significant cost avoidance since it started using server and storage virtualization in 2006. Despite the ever-increasing demand for computing power and storage capacity, he says, the company has been able to decrease energy consumption in power and cooling by reducing the physical number of servers needing to be cooled.



OPINIONS

INFO-TECH • INSIGHT

Is Your Web Site User-Hostile?

I recently guest lectured on the topic of usability testing to computer engineering students at an Ivy League university. To give them some hands-on experience, I had these tech-savvy students run a short usability test. Usability testing is one of my favorite evaluation methods because it allows me to directly observe ease-of-use issues in real users as they attempt to complete a task.

The technology we tested was whatever cell phones the students had in their pockets, and the task was simply to reset the time or time zone on the phone. Seems easy enough, doesn't it? Unfortunately, most of these übergeeks couldn't complete the task, and most of those that did struggled to get the job done within the five minutes allotted.

If our best and brightest can't complete a simple task on a basic device, we can consider the device "user-hostile." Notwithstanding high-profile and highly profitable exceptions, much of today's technology remains user-hostile.

What About Your Web Site?

As a technology consumer, I'm sure you've had all kinds of user experiences that illustrate my point, whether it's a Web site that makes it hard to find what you need or software with unhelpful and vaguely judgmental error messages, such as "User Input Error: Illegal or Invalid Action." But as a technology producer, what can you do to be part of a solution that will make your customers' lives easier while making corporate profits fatter? Even if your company does not develop digital technology for sale, it's likely that it does have a corporate Web site that is a customer's first and enduring experience with your organization.

Making this touch point user-friendly can stimulate sales on the Web and through related channels while keeping customers loyal. Unfortunately, companies often invest heavily in developing a quality product or service offering and then add a significant sales and marketing effort, only to discourage prospective customers by unwittingly making their Web site user-hostile. How does this happen?

The executives that approve a bad Web site don't think of it as user-hostile any more than the designers and developers that created it. The site makes perfect sense to them, and so they feel it will make perfect sense to their customers.

But they're wrong. Customers can never be just like the executive, designer, or developer because they will never have the vast contextual knowledge of the product or service described on the site. And if customers don't find "it" and understand "it" within about 10 seconds, the competition is just a mouse click away.

Get It Right By Understanding Users

User-hostile technology is not a new problem. Researchers in HCI (human-computer interaction) have applied considerable brainpower to the issue, going back to the early 1960s, and this led to much of the interaction technology that we now take for granted—things like the mouse, the graphical user interface, and hypertext. HCI researchers also created development processes that can make your corporate Web sites user-friendly.

One such process is User Experience Engineering, or UXE, also called usability engineering or user-centered design. UXE is a structured research, design, and evaluation process that helps Web developers understand how users think and how they will interact with the Web site. UXE is about observing and listening to end users and incorporating what is learned into the design of a user interface. It is highly iterative: Data is collected through user research, designs are prototyped, and prototypes are usability tested, all in several cycles that end when an effective design is delivered.

HOWARD KIEWE

AUTHOR *For more than 10 years, Howard Kiewe has provided research, consulting, development, and design services to application developers within leading high-tech firms. At Info-Tech, Kiewe's research covers application management including development tools and processes, user experience, Web 2.0 technologies, and outsourcing/offshoring.*

UXE ensures that money invested in Web site or application development will yield the maximum revenue-generating value for the business by making customers happy to visit. UXE helps enterprises complete customer transactions for pennies on the Web compared to dollars over other channels such as the contact center or retail environment. And UXE can reduce development and maintenance costs by allowing developers to focus on features that end users want, delivered in a way they will understand.

Are We User-Friendly Yet?

In 1998, Al Gore said "American industry and government will become even more productive if they take advantage of usability engineering techniques." More than a decade later, leading companies such as IBM, Apple, Google, and Procter & Gamble have used UXE methods to drive profitability. Despite this momentum, there is still tremendous room for improvement, which means that those that provide customers with the user experience they want will win big.

Consider this example: Staples increased repeat e-customers by 67% after a complete redesign of its Web site guided by UXE methods. It also reduced drop-off rate by 31 to 45%, increased traffic by 80%, and increased sales by 491%. These kinds of numbers make being friendly with users all the more appealing. P

Send your comments to infotech@processor.com

OPINIONS

FROST & SULLIVAN

Cisco's Bold Entry In The Data Center Market

Cisco's UCS (Unified Computing System) announcement earlier this spring is perhaps one of the boldest moves in the company's history. While the strategic market entry will increase Cisco's exposure to the data center market, this move introduces significant risks by disrupting the IT status quo.

Understanding Cisco's Decision

Although Cisco's origins are in routing and switching, during the past few years the company has been identifying new opportunities that could compensate for the slowing growth rates in these technologies. Routing and switching, which represented almost 80% of Cisco revenues in 2002, today only account for 55%. Cisco's strategy is to expand its opportunities within its target segments and by exploring "market adjacencies," says CEO John Chambers.

The data center market represents one of these new opportunities. Cisco's entry into this area is part of a shift toward cloud computing. The goals are to better align technology with the business needs, automate processes, and lower overall IT costs. Data center consolidation, or the aggregation of distributed IT assets into a few large physical locations, represents the first step.

Once the IT assets are consolidated, the next step is server virtualization. Server virtualization is a complex task, because it entails an intricate management of virtual applications and dynamic provisioning (shifting applications from one physical server to another). There is a potential pitfall of a lack of coordination between the main IT silos of computing, networking, and storage. This can lead to a data center exhibiting "islands of virtualization" with limited resource utilization and big administrative headaches.

After server virtualization, the next logical step is the unification of these three IT silos from both a management and network fabric point of view. This will enable better automation, dynamic provisioning, and maximum utilization of computing, networking, and storage resources. This unification represents the entry point for Cisco.

RONALD GRUIA

AUTHOR *Ronald Gruia is program leader and principal analyst at Frost & Sullivan, covering emerging communications solutions.*

UCS Innovation

UCS features advancements from both the server and networking frame of reference. At the server level, UCS achieves a lower system cost and greater utilization rate by providing:

Expanded memory on a blade. Cisco is delivering three times the memory on every blade compared to its competitors.

Overprovisioning of NICs to servers. UCS connects eight blade servers to a network via two 10Gb NICs. A traditional architecture would dedicate one NIC for every server. This scheme is good for the midrange, but in high-performance environments, data center managers might choose the traditional approach.

Elimination of Fibre Channel adapter cards. Cisco is using its Nexus switch to frame the Fibre Channel traffic onto Ethernet packets (called FCoE, or Fibre Channel over Ethernet). As a result, UCS lowers both the latency and the cost to process the storage traffic.

A technology named "virtual NICs." UCS leverages a virtual NIC technology that provisions many processes to a single server; each process gets its own MAC address as if it were connected to a standalone NIC. The network will be aware of these virtual MAC addresses, and this will yield a lower latency.

Advantages, Drawbacks & Risks

The UCS solution will have a variety of advantages over competing solutions, including energy efficiency achieved by reduced power and cooling requirements. Another key differentiator for UCS is a single management system, which is possible via the ownership of all the server and network elements.

Of course, like with any new technology, UCS will also face a few hurdles to success from both a technical and political perspective. Some industry pundits were quick to point to Cisco's heavy reliance on VMware. Cisco currently does not support either Microsoft Hyper-V or Citrix XenServer, but support is expected for lower-end versions of UCS in the future.

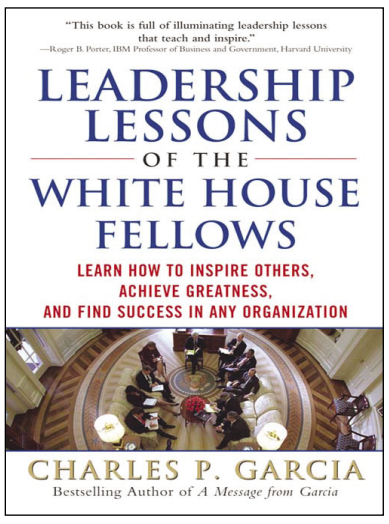
In contrast to competitors, UCS does not feature embedded storage, which limits the ability to unify and manage the full virtual environment. However, Cisco will probably enhance its relationships with vendors or possibly even acquire a storage company to address this issue.

Cisco is incurring the risk of increased competition with two of its largest resellers, HP and IBM. As part of its due diligence prior to entering a new market, Cisco likely concluded that most of these sales are more driven by customer pull than integrator push, so the IBM/HP sales would shift to other channels. However, should IBM and HP try to impede Cisco switching sales, they will also have something to lose, as Cisco is also bringing new business to them.

One of the keys of UCS' success will be to nurture deeper relationships with IT organizations, which represent a new theater for Cisco. It will take time for Cisco to establish a strong foothold in data centers, but the company has a strong record of moving into adjacent markets such as enterprise voice, where it became the leader 10 years after acquiring the Selsius IP PBX from Intecom in 1999. P

Send your comments to frostandsullivan@processor.com

BOOK REVIEW



Inspiring Others

Leadership Lessons of the White House Fellows: Learn How to Inspire Others, Achieve Greatness, and Find Success in any Organization

Author: Charles P. Garcia
Publisher: McGraw-Hill
Price: $24.95 (list)
Format: Hardcover, 304 pages

by Kurt Marko

• • •

In the book world, the topic of leadership is to business what dieting is to self-help: a perennially popular "evergreen" topic, with an endless supply of experts offering fresh ways of rehashing the same old themes, concepts, and advice. Where previous authors have gleaned leadership wisdom from famous presidents, generals, or business moguls, Charles P. Garcia has chosen the participants of a rather obscure government program as fodder for his distillation of leadership lessons.

In "Leadership Lessons of the White House Fellows," Garcia, himself a fellow 20 years ago, canvasses alumni from the program to share the experiences that shaped their subsequent careers at some of the highest levels of government and industry. President Johnson founded the highly competitive and selective White House Fellows program in 1964. The author describes the program as a "Rhodes Scholarship for Public Service." Like that selective scholarship, "the White House Fellowships are offered to a handful of young Americans from all walks of life, who spend a year working at the highest levels of government, learning the process of leading a nation."

Summation Of Surveys

The book is a summation of surveys and interviews from hundreds of past fellows from which the author extracts 20 lessons for aspiring leaders. Far from a simple reference guide, much of the book consists of the reminiscences, illustrative anecdotes, and morals from the author's research trove.

> "Leadership Lessons" is a handy summary of timeless principles for those charged with directing, inspiring, or mentoring colleagues.

The first lesson, "there's more to life than work," is perhaps the most poignant because it comes from a conversation historian and fellow Doris Kearns Goodwin had with President Johnson after he retired. A melancholy Johnson had asked Goodwin to work with him on his memoirs and, in a reflective moment, advised her to get married, have children, and enjoy family life. She recalls, "He talked about how he should have spent more time with his family, because that's a different and more worthy kind of posterity than the public one that he had been seeking throughout his entire political career."

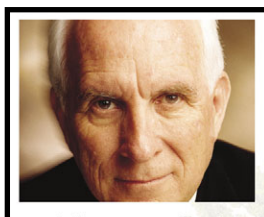
Other lessons, such as "put your people first," "act with integrity," and "leaders take risks," while perhaps cliché, are spiced with the same storytelling. For example, in illustrating the principle that "leaders energize their people," the author relates the story of one fellow assigned to General David Petraeus, former head of the U.S. forces in Iraq. At one staff meeting, Petraeus asked his reports what they felt was the top leadership priority of the brigade. Most responded with the expected answers of integrity, professional competence, and marksmanship. Eventually someone said physical fitness, the answer Petraeus was looking for. The young fellow was incredulous. "Well, we thought he was kidding, and we couldn't for the life of us figure out how that could be the No. 1 priority. But we learned later that he was right: Self-discipline and being able to perform under pressure and exist outside our comfort zone would be the key that unlocked our success."

Timeless Principles

"Leadership Lessons" is a handy summary of timeless principles for those charged with directing, inspiring, or mentoring colleagues, whether in business or government. While the principles aren't unique and are doubtless found in myriad management texts, the stories behind each are both demonstrative and compelling—narratives that, like a good parable, serve to educate and entertain. As Garcia explains, "Genuine leadership is measured by the individual moral choices one makes every day." P

Key Concepts

- The White House Fellows program, a highly selective training ground allowing young professionals to work in a one-year internship with Cabinet members and other presidential advisors, has prepared many of its alumni for careers at the highest levels of government or the corporate boardroom.
- "Leadership Lessons" is a set of 20 maxims garnered from surveys and interviews of hundreds of past fellows about the people, events, and lessons from their fellowship that shaped their subsequent careers.
- The lessons, while not unique or original, are comprehensive; each is illustrated with numerous stories, a cast of characters from the history books, and events that made front-page headlines.



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Processor Solutions Directory

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You can find more detailed information on these companies and the products they offer inside this issue.

To list your company and products, call (800) 247-4880.

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(800) 238-7272 | www.minutemanups.com

Physical Infrastructure

PDUs direct

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Server Technology is committed to the PDU market with the largest group of engineers dedicated to power distribution and other solutions within the equipment cabinet. Advancements in device power monitoring help data centers monitor and improve their efficiency, and continuous research and development is fueled by companies that look to Server Technology for their custom cabinet power solutions.

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Storage

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Storage

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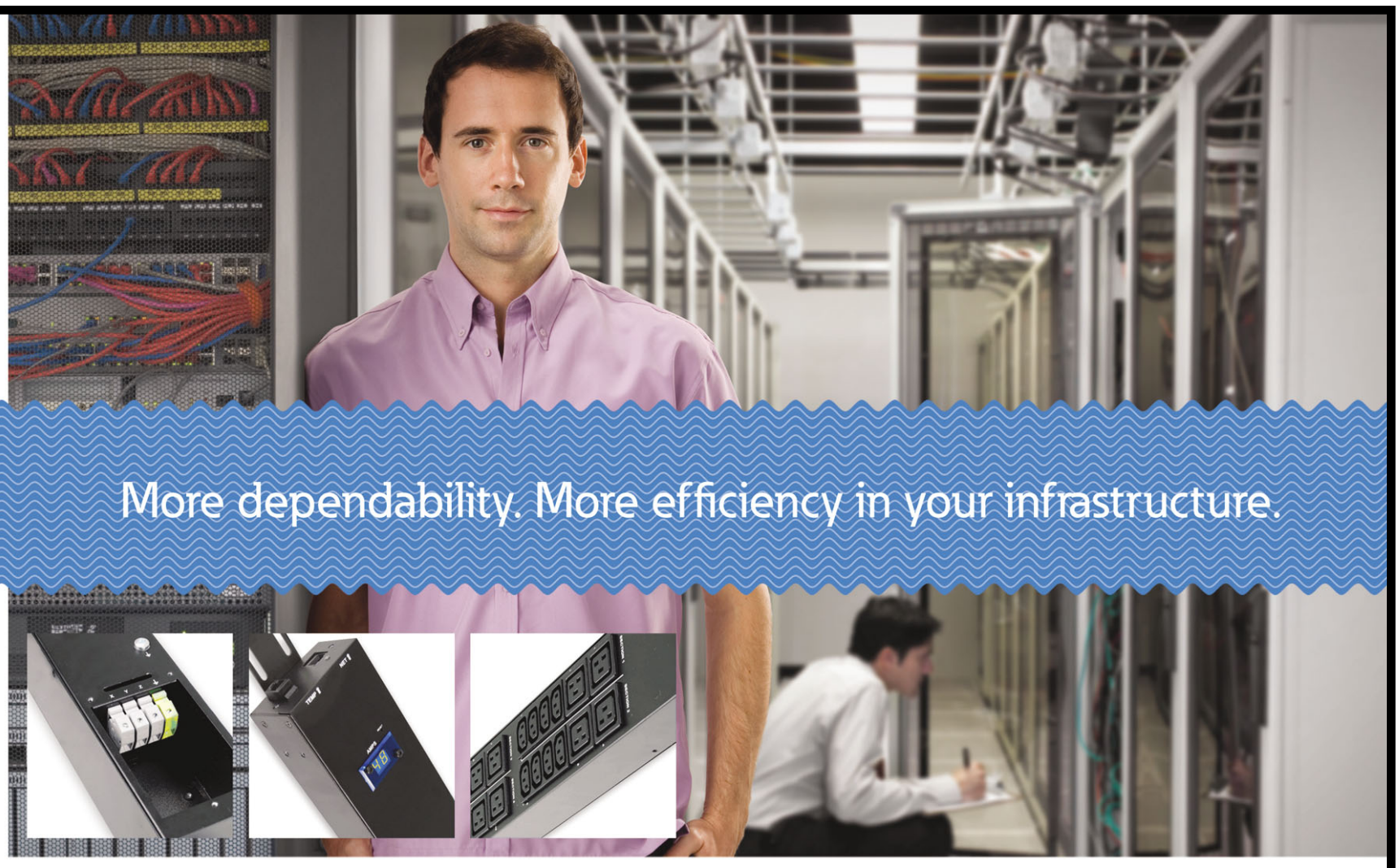

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